

CURRENT INDUSTRIAL REPORTS

Industrial Gases

January 1969

FOR RELEASE: March 28, 1969

SERIES: W28C(69)1

BUREAU OF THE CENSUS
APR 2 12 22 PM '69

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1969						
January.....	1,273	58,446	27,414	2,976	9,862	21,318
1968						
December.....	1,263	58,446	27,414	2,976	9,862	21,318
November.....	1,208	65,584	23,995	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,007	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,704	9,021	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,274	54,988	26,662	2,704	9,218	21,511
November.....	1,230	56,608	27,083	2,520	8,812	20,570
October.....	1,234	64,933	33,219	2,601	8,940	19,258
September.....	1,146	70,284	34,241	2,627	8,614	18,668
August.....	1,162	70,537	44,715	2,890	8,655	18,932
July.....	1,029	69,150	40,637	2,597	8,423	17,656
June.....	1,069	71,008	41,934	2,913	8,020	17,397
May.....	1,220	69,980	33,663	2,779	8,651	18,557
April.....	1,280	63,321	29,561	2,782	8,205	17,617
March.....	1,225	65,006	28,939	2,758	8,197	18,899
February.....	1,234	60,310	24,345	2,536	7,640	17,072
January.....	1,467	64,323	27,300	3,549	8,468	18,383

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents-\$1.50 per year.



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary
William H. Chartener, Assistant Secretary for Economic Affairs
BUREAU OF THE CENSUS A. Ross Eckler, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	JANUARY 1969 QUANTITY PRODUCED	DECEMBER 1968 QUANTITY PRODUCED	JANUARY 1968 QUANTITY PRODUCED
2813200	ACETYLENE ⁽¹⁾	MIL.CU.FT	1 273	1 263	1 278
2813415	ARGON, HIGH PURITY	DO	220	245	155
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS ⁽²⁾	S. TONS	57 199	58 321	57 392
	SOLID (DRY ICE)	DO	23 830	26 849	23 743
	HYDROGEN, HIGH PURITY (99.5-100%), TOTAL ⁽³⁾ . .	MIL.CU.FT	2 672	2 973	2 750
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT.	DO	202	203	142
2813424	PRODUCED FOR OWN USE	DO	671	782	745
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO			
2813426	LIQUID.	DO	1 799	1 988	1 863
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) ⁽³⁾ . .	DO	6 047	14 129	14 534
	NITROGEN, HIGH PURITY (99.5-100%), TOTAL ⁽⁴⁾ . .	DO	10 006	9 861	9 094
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT.	DO	536	34	48
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	5 413	5 156	4 862
2813444	PRODUCED FOR OWN USE	DO	1 088	1 014	1 121
2813445	LIQUID.	DO	3 469	3 657	3 063
	OXYGEN, HIGH PURITY (99.5-100%), TOTAL	DO	21 686	21 316	20 895
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT.	DO	115	85	164
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	16 932	16 604	16 119
2813455	PRODUCED FOR OWN USE	DO	864	806	883
2813456	LIQUID.	DO	3 775	3 821	3 729
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) ⁽⁴⁾				
	(95% O)	S. TONS	143 621	143 638	156 908

¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

²Excludes production of liquid and gas CO₂ converted to and reported as dry ice amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

³Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfers to plants consuming this gas in the production of ammonia. Of the total shown for lower purity hydrogen, 70 to 75 percent was accounted for by petroleum refineries producing hydrogen for captive use. Not all such petroleum refineries, however, are canvassed in this survey.

⁴Excludes amounts produced and used in the manufacture of ammonia and ammonia derivations.

⁵Imputation rate exceeds 25 percent.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

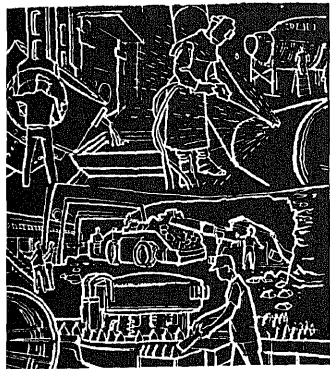
Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plant, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

Industrial Gases

February 1969

FOR RELEASE: May 1, 1969

SERIES: M28C(69)-2

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1969						
February.....	1,149	55,545	21,138	2,447	9,031	20,797
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300
October.....	1,207	61,311	31,497	2,678	9,112	20,877
September.....	1,122	66,391	32,149	2,797	8,790	20,221
August.....	1,138	66,644	41,916	3,040	8,833	20,436
July.....	1,008	65,396	38,169	2,759	8,597	19,123
June.....	1,047	67,176	39,334	2,960	8,186	18,845
May.....	1,195	63,163	31,760	2,880	8,829	20,118
April.....	1,253	60,096	27,746	2,927	8,375	19,084
March.....	1,200	51,600	26,987	2,837	8,365	20,479
February.....	1,209	55,487	22,680	2,591	7,797	18,725

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents-\$1.50 per year.



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary
William H. Chartener, Assistant Secretary for Economic Affairs
BUREAU OF THE CENSUS A. Ross Eckler, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	FEBRUARY 1969 QUANTITY PRODUCED	JANUARY 1969 QUANTITY PRODUCED	FEBRUARY 1968 QUANTITY PRODUCED
2813200	ACETYLENE ⁽¹⁾	MIL.CU.FT	1 149	1 272	1 241
2813415	ARGON, HIGH PURITY	DO	226	220	163
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS ⁽²⁾	S. TONS	55 545	57 378	47 987
	SOLID (DRY ICE)	DO	21 138	22 636	21 652
	HYDROGEN, HIGH PURITY (99.5-100%), TOTAL ⁽³⁾ . .	MIL.CU.FT	2 447	2 682	2 837
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	193	193	140
2813424	PRODUCED FOR OWN USE	DO	684	690	737
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 570	1 799	1 960
2813426	LIQUID.	DO			
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) ⁽³⁾ . .	DO	2 794	^r 2 857	12 409
	NITROGEN, HIGH PURITY (99.5-100%), TOTAL ⁽⁴⁾ . .	DO	9 031	9 975	9 007
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	⁵ 32	35	47
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	4 776	5 395	4 567
2813444	PRODUCED FOR OWN USE	DO	1 036	1 086	1 099
2813445	LIQUID.	DO	3 187	3 459	3 294
	OXYGEN, HIGH PURITY (99.5-100%), TOTAL	DO	20 797	21 667	21 114
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	99	113	139
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	16 130	16 949	16 339
2813455	PRODUCED FOR OWN USE	DO	875	857	878
2813456	LIQUID.	DO	3 693	3 748	3 758
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) ⁽⁴⁾ (95% O)	S. TONS	140 310	143 562	152 035

^rRevised by 5 percent or more from previously published data.

¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

²Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

³Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

⁴Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

⁵Imputation rate exceeds 25 percent.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

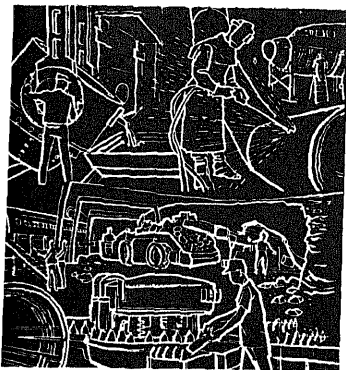
Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plant, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

Industrial Gases

March 1969

FOR RELEASE: May 23, 1969

SERIES: M28C(69)13

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1969						
March.....	1,252	62,990	24,304	2,819	10,147	23,039
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300
October.....	1,207	61,311	31,497	2,678	9,112	20,877
September.....	1,122	66,391	32,149	2,797	8,790	20,221
August.....	1,138	66,644	41,916	3,040	8,833	20,436
July.....	1,008	65,396	38,169	2,759	8,597	19,123
June.....	1,047	67,176	39,334	2,960	8,186	18,845
May.....	1,195	63,163	31,760	2,880	8,829	20,118
April.....	1,253	60,096	27,746	2,927	8,375	19,084
March.....	1,200	51,600	26,987	2,837	8,365	20,479

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents-\$1.50 per year.



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary
 Rocco C. Siciliano, Under Secretary
 William H. Chartener, Assistant Secretary for Economic Affairs
 BUREAU OF THE CENSUS A. Ross Eckler, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	MARCH 1969 QUANTITY PRODUCED	FEBRUARY 1969 QUANTITY PRODUCED	MARCH 1968 QUANTITY PRODUCED
2813200	ACETYLENE ⁽¹⁾	MIL.CU.FT	1 252	1 151	1 292
2813415	ARGON, HIGH PURITY	DO	222	218	193
2813311	CARBON DIOXIDE:				
	LIQUID AND GAS ⁽²⁾	S. TONS	62 990	55 544	53 448
2813331	SOLID (DRY ICE)	DO	24 304	21 080	22 093
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL ⁽³⁾ . .	MIL.CU.FT	2 819	2 447	3 186
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	195	193	159
2813424	PRODUCED FOR OWN USE	DO	784	684	796
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 840	1 570	2 231
2813426	LIQUID.	DO			
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) ⁽³⁾ . .	DO	3 321	2 810	11 156
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL ⁽⁴⁾ . .	DO	10 147	8 990	9 779
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	34	33	63
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	5 462	4 734	4 998
2813444	PRODUCED FOR OWN USE	DO	1 066	1 036	1 113
2813445	LIQUID.	DO	3 585	3 187	3 605
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	23 039	20 827	22 099
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	107	102	218
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 040	16 131	16 773
2813455	PRODUCED FOR OWN USE	DO	895	875	905
2813456	LIQUID.	DO	3 997	3 719	4 203
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) ⁽⁴⁾ (95% O)	S. TONS	149 344	140 590	144 471

¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

²Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

³Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

⁴Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

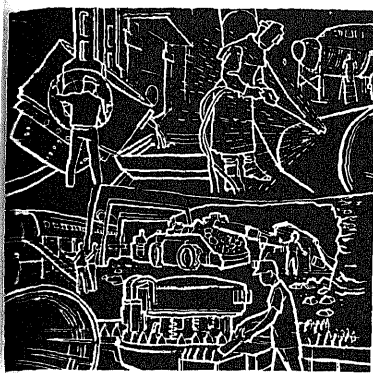
Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plant, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

Industrial Gases

April 1969

FOR RELEASE: June 19, 1969

SERIES: M28C(69)-4

JUN 25 12 41 PM '69
BUREAU OF THE CENSUS

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1969						
April.....	1,158	58,347	31,583	2,820	9,781	22,747
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	22,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300
October.....	1,207	61,311	31,497	2,678	9,112	20,877
September.....	1,122	66,391	32,149	2,797	8,790	20,221
August.....	1,138	66,644	41,916	3,040	8,833	20,436
July.....	1,008	65,396	38,169	2,759	8,597	19,123
June.....	1,047	67,176	39,334	2,960	8,186	18,845
May.....	1,195	63,163	31,760	2,880	8,829	20,118
April.....	1,253	60,096	27,746	2,927	8,375	19,084

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents-\$1.50 per year.



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary
 Rocco C. Siciliano, Under Secretary
 William H. Chartener, Assistant Secretary for Economic Affairs
BUREAU OF THE CENSUS A. Ross Eckler, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	APRIL 1969 QUANTITY PRODUCED	MARCH 1969 QUANTITY PRODUCED	APRIL 1968 QUANTITY PRODUCED
2813200	ACETYLENE ⁽¹⁾	MIL.CU.FT	1 158	1 249	1 276
2813415	ARGON; HIGH PURITY	DO	245	222	180
2813311	CARBON DIOXIDE; LIQUID AND GAS ⁽²⁾	S. TONS	58 347	61 878	47 503
2813331	SOLID (DRY ICE)	DO	31 583	24 612	25 604
	HYDROGEN; HIGH PURITY (99.5-100%); TOTAL ⁽³⁾ . .	MIL.CU.FT	2 820	2 819	2 837
2813421	GAS; PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	207	195	152
2813424	PRODUCED FOR OWN USE	DO	713	784	726
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 900	1 840	1 959
2813426	LIQUID.	DO			
2813427	HYDROGEN; LOWER PURITY (LESS THAN 99.5%) ⁽³⁾ . .	DO	3 429	3 321	12 453
	NITROGEN; HIGH PURITY (99.5-100%); TOTAL ⁽⁴⁾ . .	DO	9 781	10 058	9 643
2813441	GAS; PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	34	33	57
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	5 271	5 377	5 003
2813444	PRODUCED FOR OWN USE	DO	1 012	1 065	1 072
2813445	LIQUID.	DO	3 464	3 583	3 511
	OXYGEN; HIGH PURITY (99.5-100%); TOTAL	DO	22 747	23 030	21 930
2813452	GAS; PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	103	105	207
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	17 626	18 032	16 578
2813455	PRODUCED FOR OWN USE	DO	853	895	953
2813456	LIQUID.	DO	4 165	3 998	4 192
2813457	OXYGEN; LOWER PURITY (LESS THAN 99.5%) ⁽⁴⁾ (95% O)	S. TONS	141 149	149 344	153 621

¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

²Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

³Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

⁴Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A,2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

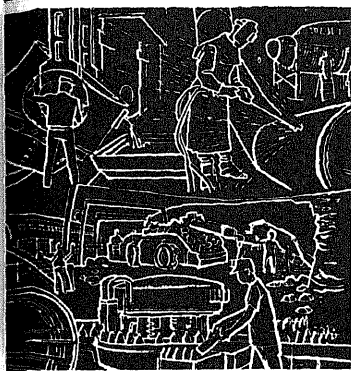
Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plant, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

Industrial Gases

May 1969

FOR RELEASE: July 17, 1969

SERIES: M28C(69)-5

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1969						
May.....	1,190	59,891	30,132	2,631	10,422	23,571
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300
October.....	1,207	61,311	31,497	2,678	9,112	20,877
September.....	1,122	66,391	32,149	2,797	8,790	20,221
August.....	1,138	66,644	41,916	3,040	8,833	20,436
July.....	1,008	65,396	38,169	2,759	8,597	19,123
June.....	1,047	67,176	39,334	2,960	8,186	18,845
May.....	1,195	63,163	31,760	2,880	8,829	20,118
April.....	1,253	60,096	27,746	2,927	8,375	19,084

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents-\$1.50 per year.



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

William H. Chartener, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS A. Ross Eckler, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	MAY 1969 QUANTITY PRODUCED	APRIL 1969 QUANTITY PRODUCED	MAY 1968 QUANTITY PRODUCED
2813200	ACETYLENE ⁽¹⁾	MIL.CU.FT	1 190	1 160	1 271
2813415	ARGON, HIGH PURITY	DO	245	245	172
2813311	CARBON DIOXIDE: LIQUID AND GAS ⁽²⁾	S. TONS	59 891	58 303	55 870
2813331	SOLID (DRY ICE)	DO	30 132	26 834	33 637
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL ⁽³⁾ . .	MIL.CU.FT	2 631	2 820	2 628
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	197	207	150
2813424	PRODUCED FOR OWN USE	DO	700	713	758
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 734	1 900	1 720
2813426	LIQUID	DO			
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) ⁽³⁾ . .	DO	3 247	3 249	14 745
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL ⁽⁴⁾ . .	DO	10 422	9 858	9 674
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	36	34	58
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	5 359	5 271	5 268
2813444	PRODUCED FOR OWN USE	DO	988	1 012	1 022
2813445	LIQUID	DO	4 039	3 541	3 326
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	23 571	22 808	21 661
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	110	101	148
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 202	17 630	16 731
2813455	PRODUCED FOR OWN USE	DO	960	853	907
2813456	LIQUID	DO	4 299	4 224	3 875
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) ⁽⁴⁾ (95% O)	S. TONS	137 739	141 149	153 269

¹Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

²Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

³Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

⁴Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

^rRevised by 5 percent or more from previously published data.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

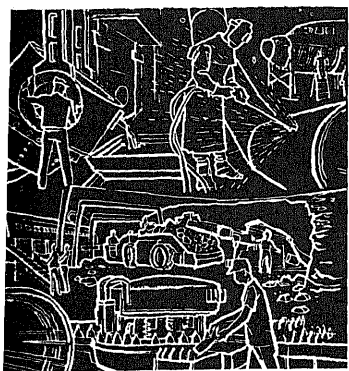
Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plant, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

Industrial Gases

June 1969

FOR RELEASE: August 20, 1969

SERIES: M28C(69)-6

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1969						
June.....	1,130	63,150	35,467	2,735	9,730	21,748
May.....	1,187	61,062	30,495	2,627	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300
October.....	1,207	61,311	31,497	2,678	9,112	20,877
September.....	1,122	66,391	32,149	2,797	8,790	20,221
August.....	1,138	66,644	41,916	3,040	8,833	20,436
July.....	1,008	65,396	38,169	2,759	8,597	19,123
June.....	1,047	67,176	39,334	2,960	8,186	18,845

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents-\$1.50 per year.



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary
 Rocco C. Siciliano, Under Secretary
 William H. Chartener, Assistant Secretary for Economic Affairs
BUREAU OF THE CENSUS A. Ross Eckler, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	JUNE 1969 QUANTITY PRODUCED	MAY 1969 QUANTITY PRODUCED	JUNE 1968 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 130	1 187	1 156
2813415	ARGON, HIGH PURITY	DO	222	245	157
2813311	CARBON DIOXIDE; LIQUID AND GAS (2)	S. TONS	63 150	61 062	50 724
2813331	SOLID (DRY ICE)	DO	35 467	30 495	37 315
2813421	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3)	MIL.CU.FT	2 735	2 627	2 611
	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	196	197	141
2813424	PRODUCED FOR OWN USE	DO	634	696	723
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO			
2813426	LIQUID	DO	1 905	1 734	1 747
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3)	DO	3 013	3 257	14 388
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4)	DO	9 730	10 468	9 477
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	529	36	46
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	5 100	5 402	4 983
2813444	PRODUCED FOR OWN USE	DO	985	991	1 008
2813445	LIQUID	DO	3 616	4 039	3 440
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	21 748	23 582	21 265
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	90	110	137
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	17 066	18 202	16 377
2813455	PRODUCED FOR OWN USE	DO	929	960	906
2813456	LIQUID	DO	3 663	4 310	3 845
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	141 577	137 802	152 309

(1) Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

(2) Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

(3) Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

(4) Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

(5) Imputation rate exceeds 25 percent.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

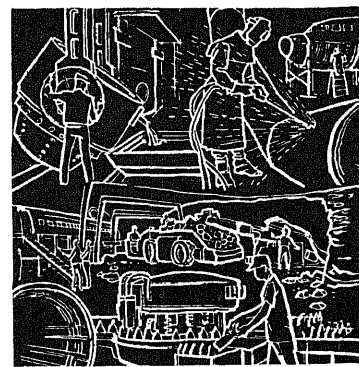
EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plant, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.

Industrial Gases

July 1969



FOR RELEASE: September 23, 1969

SERIES: M28C(69)-7

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1969						
July.....	1,201	71,502	40,298	2,524	9,999	21,558
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,627	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	28,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300
October.....	1,207	61,311	31,497	2,678	9,112	20,877
September.....	1,122	66,391	32,149	2,797	8,790	20,221
August.....	1,138	66,644	41,916	3,040	8,833	20,436
July.....	1,008	65,396	38,169	2,759	8,597	19,123

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary
Rocco C. Siciliano, Under Secretary
BUREAU OF THE CENSUS George Hay Brown, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	JULY 1969 QUANTITY PRODUCED	JUNE 1969 QUANTITY PRODUCED	JULY 1968 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 201	1 131	1 219
2813415	ARGON, HIGH PURITY	DO	225	215	176
2813311	CARBON DIOXIDE; LIQUID AND GAS (2)	S. TONS	71 502	63 150	64 545
2813331	SOLID (DRY ICE)	DO	40 298	35 466	42 683
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 524	2 738	2 724
2813421	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	189	196	122
2813424	PRODUCED FOR OWN USE	DO	577	659	623
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 758	1 883	1 979
2813426	LIQUID	DO			
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	3 111	3 062	13 523
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	9 999	9 546	9 990
2813441	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	541	29	59
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	5 041	5 047	5 199
2813444	PRODUCED FOR OWN USE	DO	1 031	985	980
2813445	LIQUID	DO	3 886	3 485	3 752
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	21 558	21 263	21 077
2813452	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	97	91	125
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	16 763	16 720	16 161
2813455	PRODUCED FOR OWN USE	DO	975	929	890
2813456	LIQUID	DO	3 723	3 523	3 901
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	136 956	141 577	164 677

(1) Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

(2) Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

(3) Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

(4) Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

(5) Imputation rate exceeds 25 percent.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plant, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



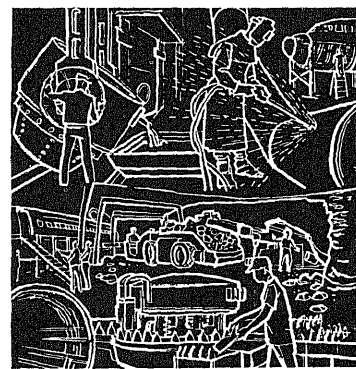
CURRENT INDUSTRIAL REPORTS

BUREAU OF THE CENSUS
LIBRARY

OCT 20 11 52 AM '69

Industrial Gases

August 1969



FOR RELEASE: October 17, 1969

SERIES: M28C(69)-8

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1969						
August.....	1,140	69,108	39,651	2,638	10,599	22,732
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,627	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300
October.....	1,207	61,311	31,497	2,678	9,112	20,877
September.....	1,122	66,391	32,149	2,797	8,790	20,221
August.....	1,138	66,644	41,916	3,040	8,833	20,436

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary
Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	AUGUST 1969 QUANTITY PRODUCED	JULY 1969 QUANTITY PRODUCED	AUGUST 1968 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 140	1 153	1 224
2813415	ARGON, HIGH PURITY	DO	233	228	157
2813311	CARBON DIOXIDE: LIQUID AND GAS (2)	S. TONS	69 108	70 828	64 429
2813331	SOLID (DRY ICE)	DO	39 651	40 299	41 107
	HYDROGEN, HIGH PURITY (99.5-100%), TOTAL (3) . .	MIL.CU.FT	2 638	2 460	2 460
2813421	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	215	189	127
2813424	PRODUCED FOR OWN USE	DO	737	578	650
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 686	1 693	1 683
2813426	LIQUID.	DO			
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	3 023	2 998	14 682
	NITROGEN, HIGH PURITY (99.5-100%), TOTAL (4) . .	DO	10 599	10 213	10 043
2813441	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	548	534	62
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	5 442	5 088	4 970
2813444	PRODUCED FOR OWN USE	DO	1 017	1 031	1 025
2813445	LIQUID.	DO	4 092	4 065	3 986
	OXYGEN, HIGH PURITY (99.5-100%), TOTAL	DO	22 732	21 952	18 960
2813452	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	103	93	125
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	17 736	17 134	14 618
2813455	PRODUCED FOR OWN USE	DO	958	974	595
2813456	LIQUID.	DO	3 935	3 751	3 622
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	138 289	136 956	138 359

[†]Revised by 5 percent or more from previously published figures.

(1) Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

(2) Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

(3) Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

(4) Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

(5) Imputation rate exceeds 25 percent.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plant, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

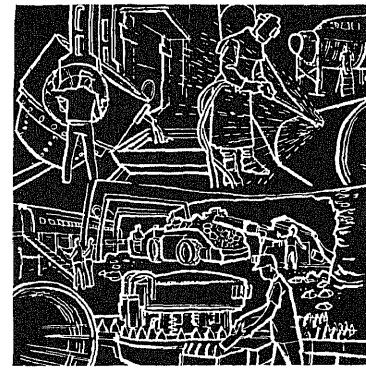
Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

BUREAU OF THE CENSUS
LIBRARY

Industrial Gases September 1969



FOR RELEASE: November 24, 1969

SERIES: M28C(69)-9

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (mil. cu. ft.)
1969						
September.....	1,205	65,614	33,801	2,482	10,882	22,659
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300
October.....	1,207	61,311	21,497	2,678	9,112	20,877
September.....	1,122	66,391	32,149	2,787	8,790	20,221

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	SEPTEMBER 1969	AUGUST 1969	SEPTEMBER 1968
			QUANTITY PRODUCED	QUANTITY PRODUCED	QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 205	1 140	1 174
2813415	ARGON, HIGH PURITY	DO	260	239	198
2813311	CARBON DIOXIDE:				
	LIQUID AND GAS (2)	S. TONS	65 614	69 388	60 840
2813331	SOLID (DRY ICE)	DO	33 801	41 030	31 645
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 482	2 628	2 394
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	204	220	124
2813424	PRODUCED FOR OWN USE	DO	769	722	736
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 509	1 686	1 534
2813426	LIQUID	DO			
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	3 083	3 023	15 501
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	10 882	10 834	9 727
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	57	67	50
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	5 879	5 615	4 851
2813444	PRODUCED FOR OWN USE	DO	1 014	1 015	1 000
2813445	LIQUID	DO	3 932	4 137	3 826
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	22 659	23 123	18 297
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	100	102	82
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	17 551	18 055	13 669
2813455	PRODUCED FOR OWN USE	DO	975	958	586
2813456	LIQUID	DO	4 033	4 008	3 960
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	138 473	138 289	146 214

¹Revised by 5 percent or more from previously published figures.

(1) Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

(2) Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

(3) Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

(4) Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

(5) Imputation rate exceeds 25 percent.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

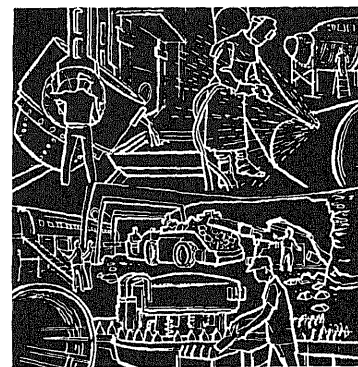
Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



C-2

Industrial Gases

October 1969



FOR RELEASE: December 18, 1969

SERIES: M28C(69)-10

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (mil. cu. ft.)
1969						
October.....	1,242	62,808	30,675	2,809	11,684	24,021
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300
October.....	1,207	61,311	21,497	2,678	9,112	20,877

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	OCTOBER 1969 QUANTITY PRODUCED	SEPTEMBER 1969 QUANTITY PRODUCED	OCTOBER 1968 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 242	1 203	1 275
2813415	ARGON, HIGH PURITY	DO	262	259	205
2813311	CARBON DIOXIDE; LIQUID AND GAS (2)	S. TONS	62 808	65 614	58 366
2813331	SOLID (DRY ICE)	DO	30 675	33 801	30 407
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 809	2 483	3 098
2813421	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	226	204	210
2813424	PRODUCED FOR OWN USE	DO	785	770	767
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 798	1 509	2 121
2813426	LIQUID	DO			
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	3 131	3 027	15 693
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	11 684	10 915	9 844
2813441	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	59	56	62
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	6 323	5 910	4 993
2813444	PRODUCED FOR OWN USE	DO	1 078	1 056	1 103
2813445	LIQUID	DO	4 224	3 893	3 686
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	24 021	22 751	19 345
2813452	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	106	101	87
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 555	17 677	14 564
2813455	PRODUCED FOR OWN USE	DO	1 109	980	788
2813456	LIQUID	DO	4 251	3 993	3 906
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	131 222	138 473	148 370

(1) Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

(2) Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

(3) Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

(4) Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

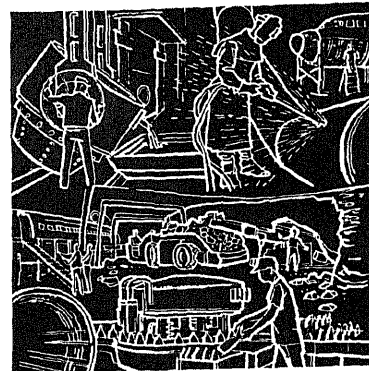
Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



FOR RELEASE: January 20, 1970

SERIES: M28C(69)-11

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (mil. cu. ft.)
1969						
November.....	1,113	57,953	25,068	2,531	10,923	23,721
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,683	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318
November.....	1,205	53,374	25,419	2,548	8,994	22,300

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	NOVEMBER 1969	OCTOBER 1969	NOVEMBER 1968
			QUANTITY PRODUCED	QUANTITY PRODUCED	QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 113	1 242	1 208
2813415	ARGON, HIGH PURITY	DO	256	262	213
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS (2)	S. TONS	57 953	62 808	65 584
	SOLID (DRY ICE)	DO	⁵ 25 068	30 675	26 082
	HYDROGEN, HIGH PURITY (99.5-100%), TOTAL (3) . .	MIL.CU.FT	2 531	2 805	2 995
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	227	226	205
2813424	PRODUCED FOR OWN USE	DO	726	781	746
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO			
			1 578	1 798	2 044
2813426	LIQUID	DO			
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 925	3 140	15 414
	NITROGEN, HIGH PURITY (99.5-100%), TOTAL (4) . .	DO	10 923	11 684	9 940
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	⁵ 52	59	35
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	6 023	6 323	4 951
2813444	PRODUCED FOR OWN USE	DO	1 142	1 078	1 133
2813445	LIQUID	DO	3 706	4 224	3 821
	OXYGEN, HIGH PURITY (99.5-100%), TOTAL	DO	23 721	24 022	20 291
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	92	106	81
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 409	18 555	15 544
2813455	PRODUCED FOR OWN USE	DO	1 014	1 109	771
2813456	LIQUID	DO	4 206	4 252	3 895
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4)				
	(95% O)	S. TONS	139 356	131 222	135 631

(1) Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

(2) Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

(3) Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

(4) Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.

(5) Imputation rate exceeds 25 percent.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.

CURRENT INDUSTRIAL REPORTS

Industrial Gases

December 1969



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: February 18, 1970

SERIES: M28C(69)-12

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1969						
December.....	1,202	54,956	24,624	2,427	11,669	23,914
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,783	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895
1967						
December.....	1,248	51,833	24,838	2,751	9,408	23,318

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	DECEMBER 1969	NOVEMBER 1969	DECEMBER 1968
			QUANTITY PRODUCED	QUANTITY PRODUCED	QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 202	1 113	1 263
2813415	ARGON, HIGH PURITY	DO	240	256	245
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS (2)	S. TONS	54 956	57 709	58 321
2813331	SOLID (DRY ICE)	DO	5 24 624	24 877	26 849
	HYDROGEN, HIGH PURITY (99.5-100%), TOTAL (3) . .	MIL.CU.FT	2 427	2 529	2 973
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	225	227	203
2813424	PRODUCED FOR OWN USE	DO	762	726	782
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO			
2813426	LIQUID	DO	1 440	1 576	1 988
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 968	2 943	14 129
	NITROGEN, HIGH PURITY (99.5-100%), TOTAL (4) . .	DO	11 669	11 055	9 861
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	5 61	52	34
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	6 639	6 108	5 156
2813444	PRODUCED FOR OWN USE	DO	1 126	1 142	1 014
2813445	LIQUID	DO	3 843	3 753	3 657
	OXYGEN, HIGH PURITY (99.5-100%), TOTAL	DO	23 914	23 984	21 316
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	96	92	85
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 678	18 636	16 604
2813455	PRODUCED FOR OWN USE	DO	1 075	1 014	806
2813456	LIQUID	DO	4 065	4 242	3 821
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4)				
	(95% O)	S. TONS	144 566	139 356	143 638

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTERPLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



BUREAU OF THE CENSUS
LIBRARY
C2
JUL 22 4 23 PM '70
Industrial Gases
Summary for
1969 (Preliminary)



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: July 20, 1970

SERIES: M28C(69)-I

Annual data for 1969 and 1968 shown in this release are a compilation of the monthly figures which have been appearing in this series. The figures for 1969 should be considered as preliminary and subject to revisions based on information furnished on Form MA-28E.2, Annual Report on Shipments and Production of Industrial Gases.

The statistics presented in the accompanying tables are for primary production, covering quantities produced for further processing in the same plant, for intra-company transfer, and for sale. They provide an up-to-date measure of activity in the inorganic field but do not necessarily indicate amounts entering the market. In some cases figures are included for material produced "in process" as an intermediate to the end products.

ACKNOWLEDGMENTS--This report was prepared in the Industry Division under the direction of Cyril M. Wildes, Assistant to the Chief for Chemicals and Wood Products. Reese R. Morgan, Chief, Chemicals, assisted by Doris W. Funk, was directly responsible for the review of the data and preparation of the report. Owen C. Gretton, Chief of the Division, and Elmer S. Biles, Assistant Chief provided overall direction and coordination of this project.

PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

Sic code	Chemical and basis	Unit of measure	Production	
			1969	1968
2813200	Acetylene (1).....	Mil.cu.ft...	14,204	15,385
2813415	Argon, high purity.....	...do.....	2,844	2,109
	Carbon dioxide:			
2813311	Liquid and gas (2).....	S. tons.....	738,660	659,515
2813331	Solid (dry ice).....	...do.....	357,652	354,615
	Hydrogen, high purity (99.5-100%), total (3).....	Mil.cu.ft...	31,460	34,699
	Gas:			
2813421	Produced for cylinder and bulk delivery shipment.....	...do.....	2,468	(NA)
2813424	Produced for own use.....	...do.....	8,565	(NA)
2813422	Produced for pipeline shipment.....	...do.....	20,427	(NA)
2813426	Liquid.....	...do.....		
2813427	Hydrogen, lower purity (less than 99.5%) (3).....	...do.....	36,607	167,053
	Nitrogen, high purity (99.5-100%), total (4).....	...do.....	124,989	114,780
	Gas:			
2813441	Produced for cylinder and bulk delivery shipment.....	...do.....	528	(NA)
2813442	Produced for pipeline shipment.....	...do.....	66,784	(NA)
2813444	Produced for own use.....	...do.....	12,604	(NA)
2813445	Liquid.....	...do.....	45,073	(NA)
	Oxygen, high purity (99.5-100%), total.....	...do.....	272,894	247,995
	Gas:			
2813452	Produced for cylinder and bulk delivery shipment.....	...do.....	1,212	(NA)
2813453	Produced for pipeline shipment.....	...do.....	212,399	(NA)
2813455	Produced for own use.....	...do.....	11,479	(NA)
2813456	Liquid.....	...do.....	47,804	(NA)
2813457	Oxygen, lower purity (less than 99.5%) (4) (95% O).....	S. tons.....	1,680,144	1,895,602

(1) Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

(2) Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea.

(3) Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refineries with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

(4) Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.



CURRENT INDUSTRIAL REPORTS

Industrial Gases

1969

U.S. DEPARTMENT OF COMMERCE / Bureau of the Census



FOR RELEASE: February 25, 1971

SERIES: M28C(69)-14

Shipments of industrial gases by primary manufacturers in 1969 totaled \$619 million, or about 2 percent more than the 1968 figure of \$608 million. The 1969 total is composed of \$90 million for acetylene; \$40 million for carbon dioxide; and \$489 million for the product grouping elemental gases and other industrial gases, n.e.c. Compared with 1968, the 1969 totals showed an increase of 1 percent for acetylene, a decrease of 4 percent for carbon dioxide, and an increase of 3 percent for other elemental gases.

Figures in this report exclude values for hydrocarbon gases, such as propane, butane and propylene of halogenated hydrocarbons and cyclopropane, which are reported to the United States Tariff Commission, and for sulfur dioxide and chlorine, which are shown in the Current Industrial Reports, Series M28A(69)-13, Inorganic Chemicals and Gases.

The shipments values for some of the gases, particularly oxygen, reported by companies vary widely not only because of the conditions of sales, including delivery by pipeline or cylinder, but also because plant operations differ. The manufacturing and selling activities of some companies are centralized at the primary production site, while other companies sell or ship liquefied gases to other sites (filling stations or conversion units) where the products are changed in form, "packaged," and sold. The values reported for some sites thus include marketing activities and for other sites do not.

Figures showing the quantities shipped to other plants of producing companies (interplant transfers) were not compiled separately and thus are unavailable. In evaluating these interplant transfers for inclusion in the totals, respondents were instructed to report values which would approximate the commercial selling value, f.o.b. plant, and not the cost of production or some other book price. For elemental gases, respondents were requested to report shipments by method of distribution (see table 3).

To avoid duplication in the product statistics, collection of information for gases is limited to primary producers. Special reporting instructions are also provided for carbon dioxide producers so that the chemical produced and shipped is reported only once, either in solid or liquid (including gaseous) form. Statistics for crude argon, lower purity nitrogen, lower purity hydrogen, and lower purity oxygen, were collected separately; and statistics exclude such activities as the liquefaction of purchased nitrogen. The quantities reported as produced, however, exclude any information for gases used as fuel in producing plant, vented, or disposed of as waste. Other limitations of the statistics are indicated in footnotes appearing at the end of table 1.

In addition to the annual production statistics shown in table 1, monthly statistics for specified gases are shown in table 2. These monthly

statistics supersede those which were released earlier in the monthly Current Industrial Reports, Series M28C, Industrial Gases, United States Production. Monthly and annual statistics have been issued beginning with January 1941. Geographic totals for specific gases are shown in tables 4 through 9. The geographic distribution of industrial gas plants by State is shown in table 10.

Although quantities produced and consumed in producing plants were not compiled, the statistics may be estimated from the production and shipments figures shown in table 1. While such approximations fail to give consideration to changes

in stocks held at producing sites, such changes, based on stock information filed from January 1954 through December 1956, do not affect such estimations significantly.

ACKNOWLEDGMENTS--This report was prepared in the Industry Division under the direction of Cyril M. Wildes, Assistant to the Chief for Chemicals and Wood Products. Reese R. Morgan, Chief, Chemicals, assisted by Doris W. Funk, was directly responsible for the review of the data and preparation of the report. Owen C. Gretton, Chief of the Division, and Elmer S. Biles, Assistant Chief, provided overall direction and coordination to this project.

Table 1.--ANNUAL PRODUCTION AND SHIPMENTS OF INDUSTRIAL GASES: 1965 TO 1969

Code	Product	Unit of measure	Year	Production (quantity)	Shipments including interplant transfers					
					Total		Shipped as gas		Shipped as liquid	
					Quantity	Value (\$1,000)	Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
2813---	INDUSTRIAL GASES, TOTAL.....		1969	(X)	(X)	¹ 618,761	(X)	(X)	(X)	(X)
			1968	(X)	(X)	¹ 607,521	(X)	(X)	(X)	(X)
			1967	(X)	(X)	¹ 572,313	(X)	(X)	(X)	(X)
			1966	(X)	(X)	¹ 532,223	(X)	(X)	(X)	(X)
			1965	(X)	(X)	¹ 513,094	(X)	(X)	(X)	(X)
28132--	Acetylene.....	Mil. cu. ft.	1969	² 14,386	7,946	89,799	(X)	(X)	(X)	(X)
			1968	² 15,071	² 8,151	² 89,025	(X)	(X)	(X)	(X)
			1967	² 14,269	8,176	87,147	(X)	(X)	(X)	(X)
			1966	² 16,598	9,548	97,532	(X)	(X)	(X)	(X)
			1965	² 16,659	9,691	98,018	(X)	(X)	(X)	(X)
28133--	Carbon dioxide, total.....	Short tons..	1969	1,069,370	978,531	40,164	(X)	(X)	(X)	(X)
			1968	¹ 1,058,120	943,466	41,774	(X)	(X)	(X)	(X)
			1967	1,089,309	971,603	47,420	(X)	(X)	(X)	(X)
			1966	1,081,878	947,959	50,153	(X)	(X)	(X)	(X)
			1965	1,085,751	971,900	52,724	(X)	(X)	(X)	(X)
2813311	Liquid and gas.....	...do.....	1969	³ 700,049	608,981	20,455	(X)	(X)	(X)	(X)
			1968	³ 684,014	² 575,945	² 22,491	(X)	(X)	(X)	(X)
			1967	³ 717,199	618,891	29,359	(X)	(X)	(X)	(X)
			1966	³ 702,831	585,995	31,189	(X)	(X)	(X)	(X)
			1965	³ 664,660	554,770	30,283	(X)	(X)	(X)	(X)
2813331	Solid (dry ice).....	...do.....	1969	369,321	369,550	19,709	(X)	(X)	(X)	(X)
			1968	³ 374,106	³ 367,521	³ 19,283	(X)	(X)	(X)	(X)
			1967	372,110	352,712	18,061	(X)	(X)	(X)	(X)
			1966	379,047	361,964	18,964	(X)	(X)	(X)	(X)
			1965	421,091	417,130	22,441	(X)	(X)	(X)	(X)
28134--	Elemental gases and other industrial gases, n.e.c., total.....		1969	(X)	(X)	⁴ 488,798	(X)	(X)	(X)	(X)
			1968	(X)	(X)	⁴ 476,722	(X)	(X)	(X)	(X)
			1967	(X)	(X)	⁴ 437,746	(X)	(X)	(X)	(X)
			1966	(X)	(X)	⁴ 384,538	(X)	(X)	(X)	(X)
			1965	(X)	(X)	⁴ 362,352	(X)	(X)	(X)	(X)
2813415	Argon, high purity (99.97-100%).....	Mil. cu. ft.	1969	2,597	2,596	38,659	233	8,293	2,363	30,366
			1968	² 2,114	² 2,113	² 33,162	² 220	² 7,290	² 1,893	² 25,872
			1967	1,912	1,910	25,499	291	9,457	1,619	16,042
			1966	1,710	1,710	26,741	308	10,294	1,402	16,447
			1965	1,286	1,285	22,825	312	11,601	973	11,224
	Helium ⁴.....	...do.....	1969	4,752	760	(NA)	(NA)	(NA)	(NA)	(NA)
			1968	4,855	867	(NA)	(NA)	(NA)	(NA)	(NA)
			1967	4,712	907	(NA)	(NA)	(NA)	(NA)	(NA)
			1966	4,606	948	(NA)	(NA)	(NA)	(NA)	(NA)
			1965	4,365	757	(NA)	(NA)	(NA)	(NA)	(NA)
	Hydrogen, total.....	...do.....	1969	⁵ 65,090	26,082	38,264	(D)	(D)	(D)	(D)
			1968	⁵ 201,752	² 28,255	² 37,822	(D)	(D)	(D)	(D)
			1967	⁵ 158,539	27,666	39,131	(D)	(D)	(D)	(D)
			1966	⁵ 137,719	30,649	42,999	(D)	(D)	(D)	(D)
			1965	⁵ 121,635	26,017	38,438	(D)	(D)	(D)	(D)
	High purity, total.....	...do.....	1969	31,939	23,078	37,282	(D)	(D)	(D)	(D)
			1968	34,699	² 25,587	² 36,981	(D)	(D)	(D)	(D)
			1967	34,088	25,607	38,414	(D)	(D)	(D)	(D)
			1966	35,494	27,849	42,148	(D)	(D)	(D)	(D)
			1965	30,114	22,860	37,406	(D)	(D)	(D)	(D)
2813423	Electrolytic process.....	...do.....	1969	14,444	10,202	10,092	(D)	(D)	-	-
			1968	13,656	² 9,359	² 10,155	(D)	(D)	-	-
			1967	14,374	9,693	11,251	(D)	(D)	(D)	(D)
			1966	13,709	9,446	11,145	(D)	(D)	(D)	(D)
			1965	12,813	8,496	7,817	(D)	(D)	(D)	(D)
2813425	From other sources.....	...do.....	1969	17,495	12,876	27,190	(D)	(D)	(D)	(D)
			1968	21,043	16,228	26,826	(D)	(D)	(D)	(D)
			1967	19,714	15,914	27,163	(D)	(D)	(D)	(D)
			1966	21,785	18,403	31,003	(D)	(D)	(D)	(D)
			1965	17,301	14,364	29,589	(D)	(D)	(D)	(D)
2813427	Lower purity (less than 99.5%) (100% basis).....	...do.....	1969	⁵ 33,151	3,004	982	(NA)	(NA)	-	-
			1968	⁵ 167,053	2,668	841	(NA)	(NA)	-	-
			1967	⁵ 124,451	2,059	717	(NA)	(NA)	-	-
			1966	⁵ 102,225	2,800	851	(NA)	(NA)	-	-
			1965	⁵ 91,521	3,157	1,032	3,157	1,032	-	-

See footnotes at end of table.

Table 1.--ANNUAL PRODUCTION AND SHIPMENTS OF INDUSTRIAL GASES: 1965 TO 1969--Continued

Code	Product	Unit of measure	Year	Production (quantity)	Shipments including interplant transfers					
					Total		Shipped as gas		Shipped as liquid	
					Quantity	Value (\$1,000)	Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
2813---	INDUSTRIAL GASES--Continued									
28134--	Elemental gases and other industrial gases, n.e.c.--Continued									
2813443	Nitrogen, high purity (99.5-100%)....	Mil. cu. ft.	1969	⁶ 130,956	117,526	118,042	70,733	27,826	46,793	90,216
			1968	⁷ 118,731	⁷ 105,370	⁷ 114,777	⁷ 61,056	⁷ 23,819	⁷ 44,314	⁷ 90,958
			1967	⁶ 103,933	91,941	99,640	53,077	25,147	38,864	74,493
			1966	⁸ 89,946	78,700	80,637	47,100	28,771	31,600	51,866
			1965	⁶ 72,479	65,273	69,191	38,139	24,724	27,134	44,467
	Oxygen, high purity (99.5-100%), total.....	...do.....	1969	275,962	264,566	229,240	216,833	112,131	47,733	117,109
			1968	247,995	⁷ 238,408	⁷ 224,867	⁷ 192,458	⁷ 102,375	⁷ 45,950	⁷ 122,492
			1967	225,191	220,802	208,758	178,914	108,801	41,888	99,957
			1966	212,751	202,446	173,804	159,402	106,865	43,044	66,939
			1965	182,114	172,354	172,487	132,206	97,449	40,148	75,038
2813451	Electrolytic.....	...do.....	1969	351	296	1,135	(D)	(D)	(D)	(D)
			1968	371	299	⁷ 1,194	(D)	(D)	(D)	(D)
			1967	406	319	1,366	(D)	(D)	(D)	(D)
			1966	519	366	1,891	(D)	(D)	(D)	(D)
			1965	663	438	1,765	(D)	(D)	(D)	(D)
2813454	Liquefaction.....	...do.....	1969	275,611	264,270	228,105	(D)	(D)	(D)	(D)
			1968	247,624	⁷ 238,109	⁷ 223,673	(D)	(D)	(D)	(D)
			1967	224,785	220,483	207,392	(D)	(D)	(D)	(D)
			1966	212,232	202,080	171,913	(D)	(D)	(D)	(D)
			1965	181,451	171,916	170,722	(D)	(D)	(D)	(D)
2813457	Oxygen, lower purity.....	Short tons..	1969	⁷ 2,055,203	(D)	(S)	(D)	(D)	-	-
			1968	⁷ 2,173,697	(D)	(S)	(D)	(D)	-	-
			1967	⁷ 1,971,981	(D)	(S)	(D)	(D)	-	-
			1966	⁷ 2,097,353	(D)	(S)	(D)	(D)	-	-
			1965	⁷ 2,170,389	(D)	(S)	(D)	(D)	-	-
2813471	Nitrous oxide.....	1,000 gals. (STP).....	1969	1,052,712	1,051,910	3,917	(X)	(X)	(X)	(X)
			1968	996,658	996,586	3,887	(X)	(X)	(X)	(X)
			1967	953,065	953,583	4,432	(X)	(X)	(X)	(X)
			1966	931,858	935,514	4,612	(X)	(X)	(X)	(X)
			1965	857,679	862,367	4,133	(X)	(X)	(X)	(X)
2813498	Other industrial gases, n.e.c., including lower purity nitrogen, crude argon, carbon dioxide produced and transferred for further processing, and crude and high purity helium produced in privately owned plants ⁹.....	.....	1969	(X)	(X)	⁸ 60,676	(X)	(X)	(X)	(X)
			1968	(X)	(X)	⁷ 62,207	(X)	(X)	(X)	(X)
			1967	(X)	(X)	⁷ 60,286	(X)	(X)	(X)	(X)
			1966	(X)	(X)	⁷ 55,745	(X)	(X)	(X)	(X)
			1965	(X)	(X)	⁸ 55,278	(X)	(X)	(X)	(X)

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. (NA) Not available. n.e.c. Not elsewhere classified. ⁷ Revised. (X) Not applicable.

⁸Excludes value for helium produced in government owned plants.

⁹Excludes information from railroad shops, shipyards, welding shops, and small establishments using portable generators.

⁶Excludes production of liquid and gas carbon dioxide converted to and reported as dry ice and also amounts converted from pure carbon dioxide (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or uraa, and quantities produced and transferred to other plants where it is further processed.

⁴Source: U.S. Department of Interior, Bureau of Mines.

⁵Excludes amounts vented, used as fuel, etc., and amounts produced and consumed in the manufacture of synthetic ammonia and methanol, but includes an unspecified amount produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts produced by the ammonia dissociation process (cracking of ammonia). Also excludes amounts produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refiners with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

⁶Excludes amounts produced and consumed in the manufacture of synthetic ammonia or ammonia derivatives.

⁷Excludes amounts produced and used in the manufacture of ammonia.

⁸Code 2813457 combined with 2813498.

⁹Excludes hydrocarbon gases such as propane, butane, and propylene, or halogenated hydrocarbons and cyclopropane, which are reported to the U.S. Tariff Commission. Also excludes sulfur dioxide and chlorine, figures for which are shown in Current Industrial Reports Series M28A(69)-13, Inorganic Chemicals and Gases.

Table 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES, BY MONTHS: 1968 AND 1969

Months	Acetylene 2813200 (mil. cu.ft.)	Carbon dioxide		Argon (refined) 2813415 (mil. cu. ft.)	Hydrogen		Nitrogen (high purity 2813443 (mil. cu. ft.)	Oxygen	
		Liquid and gas 2813311 (short tons)	Solid (dry ice) 2813331 (short tons)		High purity 2813423 (mil. cu. ft.)	Lower purity 2813427 (mil. cu. ft.)		High purity 2813451 2813454 (mil. cu. ft.)	Lower purity 2813457 (short tons)
1969, TOTAL..	14,386	700,049	369,321	2,597	31,939	¹ 33,151	130,956	275,962	2,055,203
January.....	1,289	55,923	23,371	225	2,733	2,834	10,521	21,926	175,459
February.....	1,165	54,318	21,768	192	2,490	2,705	9,685	21,086	172,102
March.....	1,266	58,589	25,417	197	2,822	2,986	10,756	23,290	183,166
April.....	1,175	55,953	27,709	218	2,863	2,934	10,323	23,068	172,661
May.....	1,204	58,059	31,487	219	2,670	2,914	11,005	23,841	168,544
June.....	1,145	59,501	36,621	192	2,781	2,755	10,082	21,522	173,089
July.....	1,168	66,525	41,618	203	2,503	2,606	10,824	22,211	187,698
August.....	1,154	64,010	42,372	245	2,670	2,972	11,301	23,382	169,030
September.....	1,219	61,129	34,910	232	2,525	2,659	11,400	23,010	169,214
October.....	1,258	58,866	31,679	233	2,847	2,728	11,988	24,281	160,422
November.....	1,126	54,719	25,694	230	2,571	2,542	11,359	24,243	170,482
December.....	1,217	52,457	26,675	211	2,464	2,516	11,712	24,102	173,336
1968, TOTAL..	¹ 15,071	¹ 684,014	¹ 374,106	¹ 2,114	34,699	¹ 167,053	¹ 118,731	247,995	² 2,173,697
January.....	1,294	57,326	24,048	146	2,850	14,402	9,315	20,874	189,566
February.....	1,256	47,577	21,840	154	2,937	12,277	9,229	21,093	184,308
March.....	1,308	53,235	22,320	184	3,286	11,025	10,001	22,078	179,055
April.....	1,291	47,069	26,026	171	2,937	12,322	9,865	21,909	185,895
May.....	1,287	55,730	34,487	163	2,728	14,614	9,895	21,640	184,772
June.....	1,171	50,413	38,380	148	2,711	14,257	9,698	21,244	184,583
July.....	1,234	64,747	44,140	167	2,825	13,392	10,211	21,056	196,180
August.....	1,239	64,607	42,366	148	2,661	14,551	10,264	18,939	169,862
September.....	1,192	60,895	32,398	189	2,495	15,370	9,948	18,276	177,716
October.....	1,293	58,323	31,082	197	3,199	15,562	10,064	19,323	178,331
November.....	1,225	65,811	28,106	208	3,096	15,283	10,160	20,269	167,518
December.....	1,281	58,281	28,913	239	3,074	13,998	10,081	21,294	175,911

¹Revised.²Data for 1969 exclude amounts produced in petroleum refineries for captive use. However, 70 to 75 percent of 1968 figures are accounted for by petroleum refineries.Table 3.--SHIPMENTS OF SPECIFIED GASES, BY METHOD OF DISTRIBUTION: 1965 TO 1969
(Quantity in million cubic feet; value in thousands of dollars)

Code	Product	Year	Total shipments including inter- plant transfers		Shipped as gas						Shipped as liquid			
					Cylinder		Bulk delivery		Pipeline		Cylinder		Bulk delivery	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
2813415	Argon, high purity...	1969	2,596	38,659	211	8,064	22	229	-	-	9	358	2,354	30,008
		1968	¹ 2,113	¹ 33,162	¹ 168	¹ 6,440	52	850	-	-	10	373	¹ 2,883	¹ 25,499
		1967	1,910	25,499	196	7,958	¹ 95	¹ 1,499	(¹)	(¹)	9	368	1,610	15,674
		1966	1,710	26,741	175	7,427	¹ 133	¹ 2,867	(¹)	(¹)	(D)	(D)	(D)	(D)
		1965	1,285	22,825	216	9,364	¹ 96	¹ 2,237	(¹)	(¹)	(D)	(D)	(D)	(D)
2813423 2813425	Hydrogen, high purity purity (99.5-100%)..	1969	¹ 23,078	¹ 37,282	¹ 512	¹ 2,202	(D)	(D)	13,825	8,007	-	-	(D)	(D)
		1968	¹ 25,587	¹ 36,981	¹ 498	¹ 2,466	(D)	(D)	¹ 13,593	¹ 7,655	-	-	(D)	(D)
		1967	25,607	38,414	457	2,683	(D)	(D)	13,533	7,555	-	-	(D)	(D)
		1966	27,849	42,148	423	2,397	(D)	(D)	13,568	9,720	-	-	(D)	(D)
		1965	22,860	37,406	509	2,320	(D)	(D)	12,183	5,773	-	-	(D)	(D)
2813443	Nitrogen, high purity	1969	¹ 117,526	¹ 118,042	332	¹ 2,223	¹ 414	¹ 1,631	¹ 69,987	¹ 23,972	146	702	¹ 46,647	¹ 89,514
		1968	¹ 105,370	¹ 114,777	362	¹ 2,730	¹ 474	¹ 1,961	¹ 60,220	¹ 19,128	180	822	¹ 44,134	¹ 90,136
		1967	91,941	99,640	396	3,171	379	2,100	¹ 52,302	19,876	207	951	38,657	73,542
		1966	78,700	80,637	401	3,782	555	2,875	46,144	22,114	496	1,796	31,104	50,070
		1965	65,273	69,191	501	4,215	458	2,903	37,180	17,606	403	2,297	26,731	42,170
	Oxygen, high purity, total.....	1969	¹ 264,566	¹ 229,240	¹ 443	¹ 9,678	¹ 2,176	¹ 2,899	¹ 213,214	¹ 99,554	¹ 177	¹ 1,081	¹ 47,556	¹ 116,028
		1968	¹ 238,408	¹ 224,867	¹ 946	¹ 8,255	¹ 2,352	¹ 3,230	¹ 189,160	¹ 90,890	¹ 181	¹ 1,030	¹ 45,769	¹ 121,462
		1967	220,802	208,758	1,396	11,642	2,460	4,726	175,058	92,433	343	1,640	41,545	98,317
		1966	202,446	173,804	1,752	14,308	2,556	5,712	155,094	86,845	374	1,579	42,670	65,360
		1965	172,354	172,487	2,137	16,843	1,818	6,490	128,251	74,116	665	3,861	39,483	71,177
1813451	Electrolytic process.....	1969	296	¹ 1,135	59	¹ 552	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1968	299	¹ 1,194	57	¹ 647	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1967	319	1,366	85	836	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1966	366	1,891	96	1,080	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1965	438	1,765	119	884	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
2813454	Liquefaction process.....	1969	¹ 264,270	¹ 228,105	¹ 384	¹ 9,126	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1968	¹ 238,109	¹ 223,673	¹ 889	¹ 7,608	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1967	220,483	207,392	1,311	10,806	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1966	202,080	171,913	1,656	13,228	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1965	171,916	170,722	2,018	15,959	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies.

¹Revised.²Pipeline shipments are included with bulk delivery to avoid disclosing figures for individual companies.

Table 4.--PRODUCTION AND SHIPMENTS OF ACETYLENE, BY GEOGRAPHIC AREA: 1969

Geographic area	Production (mil. cu. ft.)	Total shipments including interplant transfers	
		Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	14,386	7,946	89,732
Northeast Region and North Central Region...	2,916	2,094	30,708
South Region.....	11,013	5,541	50,536
Mountain Division.....	77	65	2,166
Pacific Division.....	380	246	6,322

¹See table 10 for the number of establishments reporting production by State.

Table 5.--PRODUCTION AND SHIPMENTS OF CARBON DIOXIDE, BY DIVISIONS: 1969

Division	Total liquid and solid			Liquid and gas			Solid (dry ice)		
	Production (short tons)	Shipments		Production (short tons)	Shipments		Production (short tons)	Shipments	
		Quantity (short tons)	Value (\$1,000)		Quantity (short tons)	Value (\$1,000)		Quantity (short tons)	Value (\$1,000)
UNITED STATES, TOTAL ¹	1,069,370	978,531	40,164	700,049	608,981	20,455	369,321	369,550	19,709
New England and Middle Atlantic.....	133,192	133,454	6,378	74,208	73,938	2,576	58,984	59,516	3,802
East North Central.....	190,135	178,432	8,593	118,894	107,191	4,592	71,241	71,241	4,001
West North Central.....	194,930	195,656	5,783	149,592	150,025	3,185	45,338	45,631	2,598
South Atlantic and East South Central....	174,402	167,685	9,721	109,804	103,287	5,521	64,598	64,398	4,200
West South Central.....	146,345	81,114	2,472	121,665	56,830	1,236	24,680	24,284	1,236
Mountain.....	57,707	57,707	2,066	23,624	23,624	665	34,083	34,083	1,401
Pacific.....	172,659	164,483	5,151	102,262	94,086	2,680	70,397	70,397	2,471

¹See table 10 for the number of establishments reporting production by State.

Table 6.--SHIPMENTS OF ARGON (HIGH PURITY) BY GEOGRAPHIC AREA: 1969

Geographic area	Total shipments including interplant transfers	
	Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	2,596	38,659
Northeast Region.....	532	9,397
East North Central Division.....	926	12,000
Ohio.....	393	5,304
South Atlantic Division.....	435	6,727
East South Central Division.....	123	1,972
West South Central Division.....	244	2,755
West Region.....	336	5,808
California.....	290	4,092

¹See table 10 for the number of establishments reporting production by State.

Table 7.--PRODUCTION AND SHIPMENTS OF HYDROGEN (HIGH PURITY) BY GEOGRAPHIC AREA: 1969

Geographic area	Production (mil. cu. ft.)	Total shipments including interplant transfers	
		Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	31,939	23,078	37,282
Northeast Region.....	4,064	2,373	5,099
North Central Region.....	5,145	3,816	6,035
South Region and West Region.....	22,730	16,889	26,148
East South Central Division.....	3,530	963	1,207
West South Central Division.....	7,623	6,158	5,681

¹See table 10 for the number of establishments reporting production by State.

Table 8.--PRODUCTION AND SHIPMENTS OF NITROGEN (HIGH PURITY) BY GEOGRAPHIC AREA: 1969

Geographic area	Production (mil. cu. ft.)	Total shipments including interplant transfers	
		Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	130,956	117,526	118,042
New England Division.....	2,598	2,554	5,658
Middle Atlantic Division.....	14,622	14,279	13,832
New York.....	2,222	1,929	2,644
New Jersey.....	4,713	4,663	1,761
Pennsylvania.....	7,687	7,687	9,427
North Central Region.....	25,193	24,443	26,709
Ohio.....	6,546	6,421	9,854
Illinois.....	5,012	4,950	6,592
South Atlantic Division.....	22,368	20,095	20,506
West Virginia.....	9,686	7,430	3,314
East South Central Division.....	7,988	6,504	8,140
Tennessee.....	2,173	1,026	1,434
Alabama.....	3,726	3,726	5,541
West South Central Division.....	42,201	33,733	20,353
Texas.....	31,364	28,000	16,112
Mountain Division.....	1,052	1,052	1,560
Utah.....	52	52	171
Pacific Division.....	14,934	14,866	21,284
California.....	14,431	14,362	18,362

¹See table 10 for the number of establishments reporting production by State.

Table 9.--PRODUCTION AND SHIPMENTS OF OXYGEN (HIGH PURITY), BY GEOGRAPHIC AREAS: 1969

Geographic area	Production (mil. cu. ft.)	Total shipments including interplant transfers	
		Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	275,962	264,566	229,240
New England Division.....	1,145	1,116	2,564
Middle Atlantic Division.....	66,755	66,614	53,026
New York.....	15,409	15,332	6,681
New Jersey.....	1,899	1,840	2,402
Pennsylvania.....	49,447	49,442	43,943
North Central Region.....	104,623	95,429	75,060
Ohio.....	34,203	34,199	23,741
Michigan.....	21,099	11,656	7,860
South Atlantic Region.....	34,894	33,557	32,228
West Virginia.....	17,869	16,620	11,086
Florida.....	1,459	1,459	4,313
East South Central Division.....	23,466	23,217	19,942
Alabama.....	9,185	8,935	10,728
West South Central Division.....	25,212	25,047	19,388
Texas.....	23,070	23,070	15,292
Mountain Division.....	4,877	4,596	5,407
Utah.....	1,657	1,375	1,632
Pacific Division.....	14,990	14,990	21,625
California.....	13,794	13,794	15,378

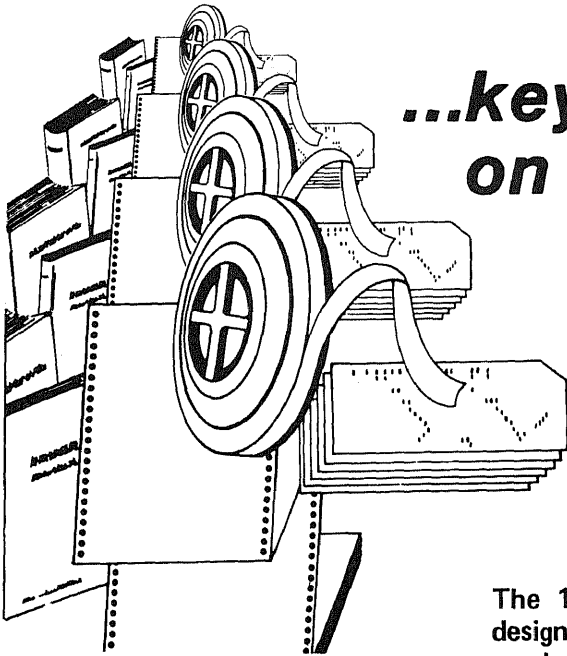
¹See table 10 for number of establishments reporting production by State.

Table 10.--NUMBER OF ESTABLISHMENTS REPORTING THE PRODUCTION OF SELECTED INDUSTRIAL GASES, BY STATE: 1969

State	Acetylene		Carbon Dioxide			Argon (refined) 2813415	Hydrogen		Nitrogen high purity 2813443	Oxygen		Nitrous oxide 2813471
	From calcium carbide ¹ 2813211- 12	From other sources ¹ 2813251- 52	Total ¹ 28133	Liquid or gas ² 2813311	Solid 2813331		High purity ¹ 2813423- 25	Lower purity 2813427		High purity ¹ 2813451- 54	Lower purity 2813457	
UNITED STATES, TOTAL.....	207	13	66	57	44	69	105	42	193	186	14	7
New England.....	6	-	-	-	-	1	5	-	11	7	-	-
Maine.....	1	-	-	-	-	-	1	-	1	2	-	-
New Hampshire.....	-	-	-	-	-	-	-	-	-	-	-	-
Vermont.....	-	-	-	-	-	-	-	-	-	-	-	-
Massachusetts.....	3	-	-	-	-	1	2	-	7	4	-	-
Rhode Island.....	1	-	-	-	-	-	-	-	-	-	-	-
Connecticut.....	1	-	-	-	-	-	2	-	3	1	-	-
Middle Atlantic.....	21	-	6	5	5	10	14	3	32	34	1	3
New York.....	6	-	2	2	1	1	3	1	10	5	-	1
New Jersey.....	4	-	2	2	2	2	7	2	7	6	-	2
Pennsylvania.....	11	-	2	1	2	7	4	-	15	23	1	-
East North Central.....	40	1	8	7	6	17	25	9	38	44	-	1
Ohio.....	16	-	4	4	4	7	9	1	13	22	-	1
Indiana.....	7	1	1	1	-	3	3	1	5	4	-	-
Illinois.....	6	-	2	1	2	4	7	1	11	11	-	-
Michigan.....	8	-	-	-	-	3	6	1	7	6	-	-
Wisconsin.....	3	-	1	1	-	-	-	-	2	1	-	-
West North Central.....	17	-	11	8	7	-	2	2	8	9	1	1
Minnesota.....	3	-	2	1	1	-	-	-	2	3	1	-
Iowa.....	3	-	2	2	1	-	-	-	-	-	-	-
Missouri.....	2	-	4	2	3	-	1	1	4	3	-	1
North Dakota.....	3	-	-	-	-	-	-	-	-	-	-	-
South Dakota.....	3	-	-	-	-	-	-	-	1	2	-	-
Nebraska.....	1	-	-	-	-	-	1	-	-	-	-	-
Kansas.....	5	-	3	3	2	-	-	1	1	1	-	-
South Atlantic.....	26	2	8	7	5	8	11	5	23	15	2	1
Delaware.....	-	-	-	-	-	1	4	-	2	2	-	-
Maryland.....	2	-	-	-	-	1	-	-	2	1	-	-
District of Columbia.....	-	-	-	-	-	-	-	-	-	-	-	-
Virginia.....	3	-	2	2	2	1	1	1	2	2	-	1
West Virginia.....	4	2	1	1	-	2	3	3	8	4	2	-
North Carolina.....	3	-	1	1	-	1	-	-	2	2	-	-
South Carolina.....	1	-	-	-	-	-	-	-	2	-	-	-
Georgia.....	5	-	1	1	1	1	2	1	1	1	-	-
Florida.....	8	-	3	2	2	1	1	-	4	3	-	-
East South Central.....	16	-	1	1	1	5	15	4	20	20	2	-
Kentucky.....	2	-	-	-	-	-	3	1	6	5	1	-
Tennessee.....	9	-	1	1	1	1	7	2	7	4	1	-
Alabama.....	4	-	-	-	-	4	5	-	6	10	-	-
Mississippi.....	1	-	-	-	-	-	-	1	1	1	-	-
West South Central.....	35	8	11	9	6	14	13	13	35	28	8	-
Arkansas.....	1	-	-	-	-	-	-	-	2	2	-	-
Louisiana.....	6	2	3	2	2	3	5	1	11	6	2	-
Oklahoma.....	4	-	-	-	-	-	1	-	-	-	-	-
Texas.....	24	6	8	7	4	11	7	12	22	20	6	-
Mountain.....	19	-	5	4	5	3	4	-	7	10	-	-
Montana.....	3	-	-	-	-	-	-	-	1	1	-	-
Idaho.....	2	-	-	-	-	-	-	-	-	-	-	-
Wyoming.....	2	-	-	-	-	-	-	-	-	1	-	-
Colorado.....	4	-	1	1	1	1	1	-	1	2	-	-
New Mexico.....	2	-	2	2	2	-	-	-	-	-	-	-
Arizona.....	1	-	-	-	-	1	2	-	2	2	-	-
Utah.....	4	-	2	1	2	1	1	-	3	4	-	-
Nevada.....	1	-	-	-	-	-	-	-	-	-	-	-
Pacific.....	27	2	16	16	9	11	16	6	19	19	-	1
Washington.....	5	-	2	2	2	1	3	-	2	2	-	-
Oregon.....	6	-	-	-	-	1	2	-	1	1	-	-
California.....	11	2	9	9	6	9	10	6	13	13	-	1
Alaska.....	2	-	-	-	-	-	-	-	-	-	-	-
Hawaii.....	3	-	5	5	1	-	1	-	3	3	-	-

- Represents zero.

¹Unduplicated.²Excludes plants converting entire production to solid.



...key resources on Census '70

1970 Census Users' Guide Part 1 and Part 2

The 1970 Census Users' Guide is a two-part publication designed to furnish most of the information data users will need for effective access and use of 1970 census data products.

ORDER FORM

Please indicate number of copies

☐ PARTS 1 and 2 of the 1970 Census Users' Guide @ \$4.00 for both

☐ PART 1 only of the 1970 Census Users' Guide @ \$1.25 per copy
C3.6/2:C33/4/970/PT.1

☐ PART 2 only of the 1970 Census Users' Guide @ \$2.75 per copy
C3.6/2:C33/4/970/PT.2

MAIL ORDER FORM

WITH PAYMENT TO

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
or any

U.S. Department of Commerce
field office

Make check or money order payable to:
Superintendent of Documents

TOTAL AMOUNT \$

Name

Address

City

State

Zip code

Part 1 of the Guide (standard, paper-bound publication) includes the text and three appendixes. The text covers such subjects as the collection and processing of 1970 data, data delivery media (computer tapes, microfilm, and printed materials), maps and information on how to obtain census materials. The appendixes are:

1970 Census Users' Dictionary - defines concepts associated with population and housing tabulations and geographic areas relevant to the collection and publication of data.

Comparison of Printed Reports and Summary Tapes summarizes and compares the contents of the reports and tapes.

Glossary - defines many terms used in connection with collecting, processing, and publishing census data, and lists many abbreviations relevant to the census.

Part 2 of the Guide (prepunched for 3-ring binder) contains appendixes specifically related to the use of census summary tapes and the Address Coding Guide.

Technical Conventions and Character Set - present information on the physical characteristics, format, and languages associated with tapes released by the Bureau.

1st-4th Count Technical Documentation - describes the arrangement of geographic codes and census data on the first four series of summary tapes.

Address Coding Guide Technical Documentation - furnishes information on the format and content of ACG's.

Many data users will find both Parts 1 and 2 of great value. Part 1, with its comprehensive coverage of the decennial census program, data products, and related services, is an important instructional and reference tool. Part 2, concerned exclusively with computer tape products, is designed particularly for those who plan to obtain tapes or who want complete information on the data content of the summary tapes.

BUREAU OF THE CENSUS
LIBRARY

24 12 50 PM '70

CURRENT INDUSTRIAL REPORTS

Industrial Gases

January 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: March 19, 1970

SERIES: M28C(70)-1

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity, (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity, (99.5-100%) (Mil. cu. ft.)
1970						
January.....	1,228	53,191	20,919	2,294	11,723	22,572
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,783	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114
January.....	1,278	57,392	23,743	2,750	9,094	20,895

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	JANUARY 1970 QUANTITY PRODUCED	DECEMBER 1969 QUANTITY PRODUCED	JANUARY 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 228	1 203	1 272
2813415	ARGON, HIGH PURITY	DO	230	235	220
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS (2)	S. TONS	53 191	54 998	57 378
2813331	SOLID (DRY ICE)	DO	20 919	25 847	22 636
	HYDROGEN, HIGH PURITY (99.5-100%), TOTAL (3) . .	MIL.CU.FT	2 294	2 422	2 682
2813421	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY				
2813421	SHIPMENT	DO	211	221	193
2813424	PRODUCED FOR OWN USE	DO	694	762	690
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO			
2813426	LIQUID	DO	1 389	1 439	1 799
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	3 013	2 920	2 857
	NITROGEN, HIGH PURITY (99.5-100%), TOTAL (4) . .	DO	11 723	11 388	9 975
2813441	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY				
2813441	SHIPMENT	DO	559	60	35
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	6 554	6 514	5 395
2813444	PRODUCED FOR OWN USE	DO	1 135	1 107	1 086
2813445	LIQUID	DO	3 975	3 707	3 459
	OXYGEN, HIGH PURITY (99.5-100%), TOTAL	DO	22 572	23 885	21 667
2813452	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY				
2813452	SHIPMENT	DO	568	96	113
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	17 353	18 678	16 949
2813455	PRODUCED FOR OWN USE	DO	999	1 075	857
2813456	LIQUID	DO	4 152	4 036	3 748
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	142 133	141 824	143 562

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE, HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

BUREAU OF THE CENSUS
LIBRARY

Industrial Gases

February 1970

APR 22 12 25 PM '70

C. 2



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: April 16, 1970

SERIES: M28C(70)-2

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
February.....	1,127	52,716	28,273	2,398	11,006	21,605
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,783	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099
February.....	1,241	47,987	21,652	2,837	9,007	21,114

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	FEBRUARY 1970 QUANTITY PRODUCED	JANUARY 1970 QUANTITY PRODUCED	FEBRUARY 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 127	1 228	1 151
2813415	ARGON, HIGH PURITY	DO	231	230	218
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS (2)	S. TONS	52 716	53 370	55 544
2813331	SOLID (DRY ICE)	DO	28 273	20 323	21 080
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 398	2 306	2 447
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	206	211	193
2813424	PRODUCED FOR OWN USE	DO	705	704	684
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 487	1 391	1 570
2813426	LIQUID	DO			
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 337	2 518	2 810
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	11 006	11 742	8 990
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	557	59	33
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	5 948	6 554	4 734
2813444	PRODUCED FOR OWN USE	DO	1 108	1 143	1 036
2813445	LIQUID	DO	3 893	3 986	3 187
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	21 605	22 535	20 827
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	565	67	102
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	16 715	17 353	16 131
2813455	PRODUCED FOR OWN USE	DO	933	999	875
2813456	LIQUID	DO	3 892	4 116	3 719
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	138 961	144 338	140 590

*REVISED BY 5 PERCENT OR MORE FROM PREVIOUSLY PUBLISHED FIGURES.

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

BUREAU OF THE CENSUS
LIBRARY

Industrial Gases

March 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: May 12, 1970

SERIES: M28C(70)-3

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
March.....	1,305	62,366	28,956	2,401	11,748	23,713
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,783	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930
March.....	1,292	53,448	22,093	3,186	9,779	22,099

[†]Revised by 5 percent or more from previously published figures.

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	MARCH 1970 QUANTITY PRODUCED	FEBRUARY 1970 QUANTITY PRODUCED	MARCH 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 305	¹ 254	1 249
2813415	ARGON, HIGH PURITY	DO	310	242	222
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS (2)	S. TONS	62 366	52 850	61 878
	SOLID (DRY ICE)	DO	28 956	27 279	24 612
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 401	2 315	2 819
2813421	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	228	206	195
2813424	PRODUCED FOR OWN USE	DO	729	703	784
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	984	1 406	1 840
2813426	LIQUID.	DO	460		
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 618	2 329	3 321
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	11 748	10 881	10 058
2813441	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	⁵ 60	57	33
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	6 352	5 799	5 377
2813444	PRODUCED FOR OWN USE	DO	1 169	1 103	1 065
2813445	LIQUID.	DO	4 167	3 922	3 583
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	23 713	21 807	23 030
2813452	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	83	67	105
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 247	16 877	18 032
2813455	PRODUCED FOR OWN USE	DO	803	933	895
2813456	LIQUID.	DO	4 580	3 930	3 998
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	137 969	138 839	149 344

¹REVISED BY 5 PERCENT OR MORE FROM PREVIOUSLY PUBLISHED FIGURES.

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

BUREAU OF THE CENSUS
LIBRARY

JUN 23 12 34 PM '70
Industrial Gases
April 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: June 17, 1970

SERIES: M28C(70)-4

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
April.....	1,340	73,168	30,608	2,402	11,746	22,566
March.....	1,306	67,224	29,227	2,355	11,748	23,737
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,783	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661
April.....	1,276	47,503	25,604	2,837	9,643	21,930

[†] Revised by 5 percent or more from previously published figures.

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	APRIL 1970 QUANTITY PRODUCED	MARCH 1970 QUANTITY PRODUCED	APRIL 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 340	1 306	1 160
2813415	ARGON, HIGH PURITY	DO	258	310	245
2813311	CARBON DIOXIDE; LIQUID AND GAS (2)	S. TONS	73 168	^r 67 224	58 303
2813331	SOLID (DRY ICE)	DO	30 608	29 227	26 834
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 402	2 355	2 820
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	263	^r 260	207
2813424	PRODUCED FOR OWN USE	DO	712	^r 729	713
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	917	^r 907	
2813426	LIQUID	DO	510	459	1 900
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 535	2 578	3 249
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	11 746	11 747	9 858
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	64	59	34
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	6 547	6 352	5 271
2813444	PRODUCED FOR OWN USE	DO	1 137	1 169	1 012
2813445	LIQUID	DO	3 998	4 167	3 541
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	22 566	23 713	22 808
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	73	83	101
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	17 676	18 247	17 630
2813455	PRODUCED FOR OWN USE	DO	729	803	853
2813456	LIQUID	DO	4 088	4 580	4 224
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	141 081	137 211	141 149

^rREVISED BY 5 PERCENT OR MORE FROM PREVIOUSLY PUBLISHED FIGURES.

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.

CURRENT INDUSTRIAL REPORTS

BUREAU OF THE CENSUS
LIBRARY

JUL 28 10 12 AM '70

Industrial Gases

May 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: July 23, 1970

SERIES: M28C(70)-5

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
May.....	1,278	77,928	31,864	2,398	12,197	23,913
April.....	1,319	72,872	29,409	2,416	11,422	23,325
March.....	1,306	67,224	29,227	2,355	11,748	23,737
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,890	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,783	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265
May.....	1,271	55,870	33,637	2,628	9,674	21,661

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	MAY 1970 QUANTITY PRODUCED	APRIL 1970 QUANTITY PRODUCED	MAY 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 278	1 319	1 187
2813415	ARGON, HIGH PURITY	DO	254	253	245
2813311	CARBON DIOXIDE:				
	LIQUID AND GAS (2)	S. TONS	77 928	72 872	61 062
2813331	SOLID (DRY ICE)	DO	5 31 864	29 409	30 495
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 398	2 416	2 627
2813421	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	200	270	197
2813424	PRODUCED FOR OWN USE	DO	697	715	696
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	987	921	1 734
2813426	LIQUID.	DO	514	510	
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 611	2 535	3 257
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	12 197	11 422	10 468
2813441	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	58	64	36
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	6 498	6 388	5 402
2813444	PRODUCED FOR OWN USE	DO	1 078	1 137	991
2813445	LIQUID.	DO	4 563	3 833	4 039
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	23 913	23 325	23 582
2813452	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	5 70	73	110
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 964	18 547	18 202
2813455	PRODUCED FOR OWN USE	DO	828	735	960
2813456	LIQUID.	DO	4 051	3 970	4 310
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	133 300	141 081	137 802

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

BUREAU OF THE CENSUS
LIBRARY

Industrial Gases

AUG 20 9 44 AM '70

C. 2

June 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: August 18, 1970

SERIES: M28C(70)-6

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
June.....	1,220	69,226	38,903	2,395	12,041	23,423
May.....	1,275	77,928	31,787	2,434	12,228	24,040
April.....	1,319	72,872	29,409	2,416	11,422	23,325
March.....	1,306	67,224	29,227	2,355	11,748	23,737
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,783	2,724	9,990	21,077
June.....	1,156	50,724	37,315	2,611	9,477	21,265

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	JUNE 1970 QUANTITY PRODUCED	MAY 1970 QUANTITY PRODUCED	JUNE 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 220	1 275	1 131
2813415	ARGON, HIGH PURITY	DO	246	253	215
2813311	CARBON DIOXIDE:				
	LIQUID AND GAS (2)	S. TONS	69 226	77 743	63 150
2813331	SOLID (DRY ICE)	DO	⁵ 38 903	31 787	35 466
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 395	2 434	2 738
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	262	^r 238	196
2813424	PRODUCED FOR OWN USE	DO	719	695	659
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	1 006	987	1 883
2813426	LIQUID.	DO	408	514	
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 578	2 567	3 062
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	12 041	12 288	9 546
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	⁵ 54	57	29
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	6 591	6 658	5 047
2813444	PRODUCED FOR OWN USE	DO	1 060	1 078	985
2813445	LIQUID.	DO	4 336	4 495	3 485
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	23 423	24 040	21 263
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	⁵ 69	70	91
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 638	19 048	16 720
2813455	PRODUCED FOR OWN USE	DO	825	^r 871	929
2813456	LIQUID.	DO	3 891	4 051	3 523
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	128 113	133 300	141 577

^r REVISED BY 5 PERCENT OR MORE FROM PREVIOUSLY PUBLISHED FIGURES.

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO2 CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO2 (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

Industrial Gases

July 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: September 22, 1970

SERIES: M28C(70)-7

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases 1968 to 1970

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
July.....	1,214	68,922	33,611	2,251	12,922	23,117
June.....	1,220	68,349	31,993	2,392	12,043	23,401
May.....	1,275	77,928	31,787	2,434	12,228	24,040
April.....	1,319	72,872	29,409	2,416	11,422	23,325
March.....	1,306	67,224	29,227	2,355	11,748	23,737
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	2,242	62,808	30,875	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960
July.....	1,219	64,545	42,783	2,724	9,990	21,077

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	JULY 1970 QUANTITY PRODUCED	JUNE 1970 QUANTITY PRODUCED	JULY 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 214	1 220	1 153
2813415	ARGON, HIGH PURITY	DO	237	246	228
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS (2)	S. TONS	68 922	68 349	70 828
	SOLID (DRY ICE)	DO	33 611	^r 31 993	40 299
	HYDROGEN, HIGH PURITY (99.5-100%), TOTAL (3) . .	MIL.CU.FT	2 251	2 392	2 460
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	221	263	189
2813424	PRODUCED FOR OWN USE	DO	698	715	578
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	840	1 006	
2813426	LIQUID	DO	492	408	1 693
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 511	2 580	2 998
	NITROGEN, HIGH PURITY (99.5-100%), TOTAL (4) . .	DO	12 922	12 043	10 218
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	^s 59	55	34
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	7 044	6 607	5 088
2813444	PRODUCED FOR OWN USE	DO	1 097	1 046	1 031
2813445	LIQUID	DO	4 722	4 335	4 065
	OXYGEN, HIGH PURITY (99.5-100%), TOTAL	DO	23 117	23 401	21 952
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	^s 72	69	93
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 251	18 638	17 134
2813455	PRODUCED FOR OWN USE	DO	882	825	974
2813456	LIQUID	DO	3 912	3 869	3 751
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	126 275	128 113	136 956

^r REVISED BY 5 PERCENT OR MORE FROM PREVIOUSLY PUBLISHED FIGURES.

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE, HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.

CURRENT INDUSTRIAL REPORTS

Industrial Gases

August 1970

U.S. DEPARTMENT OF COMMERCE / Bureau of the Census



FOR RELEASE: October 15, 1970

SERIES: M28C(70)-8

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases 1968 to 1970

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
August.....	1,125	72,897	33,408	2,422	13,068	23,011
July.....	1,214	69,544	34,621	2,253	12,926	23,147
June.....	1,220	68,349	31,993	2,392	12,043	23,401
May.....	1,275	77,928	31,787	2,434	12,228	24,040
April.....	1,319	72,872	29,409	2,416	11,422	23,325
March.....	1,306	67,224	29,227	2,355	11,748	23,737
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	2,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,677	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297
August.....	1,224	64,429	41,107	2,460	10,043	18,960

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	AUGUST 1970 QUANTITY PRODUCED	JULY 1970 QUANTITY PRODUCED	AUGUST 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 125	1 214	1 140
2813415	ARGON, HIGH PURITY	DO	234	238	239
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS (2)	S. TONS	72 897	69 544	69 388
	SOLID (DRY ICE)	DO	33 408	34 621	41 030
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 422	2 253	2 628
2813421	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	256	224	220
2813424	PRODUCED FOR OWN USE	DO	808	698	722
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	921	840	
2813426	LIQUID	DO	437	491	1 686
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 517	2 511	3 023
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	13 068	12 926	10 834
2813441	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	555	63	67
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	7 246	7 044	5 615
2813444	PRODUCED FOR OWN USE	DO	1 099	1 097	1 015
2813445	LIQUID	DO	4 668	4 722	4 137
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	23 011	23 147	23 123
2813452	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY				
	SHIPMENT	DO	569	69	102
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 038	18 251	18 055
2813455	PRODUCED FOR OWN USE	DO	864	882	958
2813456	LIQUID	DO	4 040	3 045	4 008
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	108 872	126 275	138 289

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE, HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

C-2

Industrial Gases

September 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: November 23, 1970

SERIES: M28C(70)-9

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases 1968 to 1970

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
September.....	1,156	74,931	30,040	2,327	12,636	23,035
August.....	1,124	73,394	33,222	2,422	12,971	22,974
July.....	1,214	69,544	34,621	2,253	12,926	23,147
June.....	1,220	68,349	31,993	2,392	12,043	23,401
May.....	1,275	77,928	31,787	2,434	12,228	24,040
April.....	1,319	72,872	29,409	2,416	11,422	23,325
March.....	1,306	67,224	29,227	2,355	11,748	23,737
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	2,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,627	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345
September.....	1,174	60,840	31,645	2,394	9,727	18,297

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	SEPTEMBER 1970 QUANTITY PRODUCED	AUGUST 1970 QUANTITY PRODUCED	SEPTEMBER 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 156	1 124	1 203
2813415	ARGON, HIGH PURITY	DO	262	235	259
2813311	CARBON DIOXIDE: LIQUID AND GAS (2)	S. TONS	74 931	73 394	65 614
2813331	SOLID (DRY ICE)	DO	30 040	33 222	33 801
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 258	2 422	2 483
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	263	255	204
2813424	PRODUCED FOR OWN USE	DO	845	809	770
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	838	921	
2813426	LIQUID	DO	312	437	1 509
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 538	2 517	3 027
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	12 636	12 971	10 915
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	60	^T 67	56
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	7 205	7 139	5 910
2813444	PRODUCED FOR OWN USE	DO	1 067	1 098	1 056
2813445	LIQUID	DO	4 304	4 667	3 893
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	23 035	22 974	22 751
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	66	69	101
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 177	17 969	17 677
2813455	PRODUCED FOR OWN USE	DO	844	864	980
2813456	LIQUID	DO	3 948	4 072	3 993
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	111 153	108 872	138 473

^T REVISED BY 5 PERCENT OR MORE FROM PREVIOUSLY PUBLISHED FIGURES.

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTERPLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



CURRENT INDUSTRIAL REPORTS

C. 2.

Industrial Gases

October 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: December 17, 1970

SERIES: M28C(70)-10

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases 1968 to 1970

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (2813331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen, high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
October.....	1,121	64,030	24,455	2,510	12,884	24,248
September.....	1,155	74,024	29,465	2,279	12,591	23,003
August.....	1,124	73,394	33,222	2,422	12,971	22,974
July.....	1,214	69,544	34,621	2,253	12,926	23,147
June.....	1,220	68,349	31,993	2,392	12,043	23,401
May.....	1,275	77,928	31,787	2,434	12,228	24,040
April.....	1,319	72,872	29,409	2,416	11,422	23,325
March.....	1,306	67,224	29,227	2,355	11,748	23,737
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,627	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291
October.....	1,275	58,366	30,407	3,098	9,844	19,345

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	OCTOBER 1970 QUANTITY PRODUCED	SEPTEMBER 1970 QUANTITY PRODUCED	OCTOBER 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 121	1 155	1 242
2813415	ARGON, HIGH PURITY	DO	221	259	262
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS (2)	S. TONS	64 030	74 024	62 808
2813331	SOLID (DRY ICE)	DO	24 455	29 465	30 675
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 510	2 279	2 805
2813421	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	260	263	226
2813424	PRODUCED FOR OWN USE	DO	844	843	781
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	950	860	1 798
2813426	LIQUID	DO	456	313	
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 524	2 537	3 140
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	12 884	12 591	11 684
2813441	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	562	551	59
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	7 075	7 204	6 323
2813444	PRODUCED FOR OWN USE	DO	1 061	1 068	1 078
2813445	LIQUID	DO	4 686	4 268	4 224
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	24 248	23 003	24 022
2813452	GAS:				
	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	73	66	106
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 790	18 171	18 555
2813455	PRODUCED FOR OWN USE	DO	900	833	1 109
2813456	LIQUID	DO	4 485	3 933	4 252
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	126 717	111 151	131 222

*REVISED BY 5 PERCENT OR MORE FROM PREVIOUSLY PUBLISHED FIGURES.

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTERPLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

(5) IMPUTATION RATE EXCEEDS 25 PERCENT.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.

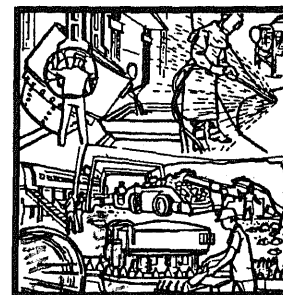


CURRENT INDUSTRIAL REPORTS

C 2

Industrial Gases

November 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: January 19, 1971

SERIES: M28C(70)-11

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases: 1968 to 1970

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (281331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
November.....	1,103	56,451	20,589	2,262	12,367	23,065
October.....	1,112	63,418	24,523	2,510	12,883	24,244
September.....	1,155	74,024	29,465	2,279	12,591	23,003
August.....	1,124	73,394	33,222	2,422	12,971	22,974
July.....	1,214	69,544	34,621	2,253	12,926	23,147
June.....	1,220	68,349	31,993	2,392	12,043	23,401
May.....	1,275	77,928	31,787	2,434	12,228	24,040
April.....	1,319	72,872	29,409	2,416	11,422	23,325
March.....	1,306	67,224	29,227	2,355	11,748	23,737
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,627	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316
November.....	1,208	65,584	26,082	2,995	9,940	20,291

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	NOVEMBER 1970 QUANTITY PRODUCED	OCTOBER 1970 QUANTITY PRODUCED	NOVEMBER 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 103	1 112	1 113
2813415	ARGON, HIGH PURITY	DO	241	219	256
2813311	CARBON DIOXIDE:				
2813331	LIQUID AND GAS (2)	S. TONS	56 451	63 418	57 709
2813331	SOLID (DRY ICE)	DO	20 589	24 523	24 877
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 262	2 510	2 529
	GAS:				
2813421	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	248	260	227
2813424	PRODUCED FOR OWN USE	DO	791	844	726
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	879	950	1 576
2813426	LIQUID	DO	344	456	
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 475	2 524	2 943
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	12 367	12 883	11 055
	GAS:				
2813441	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	52	60	52
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	7 040	7 077	6 108
2813444	PRODUCED FOR OWN USE	DO	1 125	1 061	1 142
2813445	LIQUID	DO	4 150	4 685	3 753
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	23 065	24 244	23 984
	GAS:				
2813452	PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT	DO	66	73	92
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 322	18 790	18 636
2813455	PRODUCED FOR OWN USE	DO	778	900	1 014
2813456	LIQUID	DO	3 899	4 481	4 242
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	102 365	126 717	139 356

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases-Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production-Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks-Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.



C.2

BUREAU OF THE CENSUS

FEB 23 12 22 PM '71

LIBRARY

Industrial Gases

December 1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

FOR RELEASE: February 17, 1971

SERIES: M28C(70)-12

The statistics in this publication are based on a survey of manufacturers and represent U.S. production and stocks of industrial gases. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of the survey appears on page 3.

Table 1. Summary of Production of Principal Industrial Gases: 1968 to 1970

Month and year	Acetylene (2813200) (Mil. cu. ft.)	Carbon dioxide, liquid and gas (2813311) (Short tons)	Carbon dioxide, solid (281331) (Short tons)	Hydrogen, high purity (99.5-100%) (Mil. cu. ft.)	Nitrogen high purity (99.5-100%) (Mil. cu. ft.)	Oxygen, high purity (99.5-100%) (Mil. cu. ft.)
1970						
December.....	1,073	57,456	20,488	2,448	12,661	23,822
November.....	1,102	56,432	20,850	2,272	12,392	23,341
October.....	1,112	63,418	24,523	2,510	12,883	24,244
September.....	1,155	74,024	29,465	2,279	12,591	23,003
August.....	1,124	73,394	33,222	2,422	12,971	22,974
July.....	1,214	69,544	34,621	2,253	12,926	23,147
June.....	1,220	68,349	31,993	2,392	12,043	23,401
May.....	1,275	77,928	31,787	2,434	12,228	24,040
April.....	1,319	72,872	29,409	2,416	11,422	23,325
March.....	1,306	67,224	29,227	2,355	11,748	23,737
February.....	1,254	52,850	27,279	2,315	10,881	21,807
January.....	1,228	53,370	20,323	2,306	11,742	22,535
1969						
December.....	1,203	54,998	25,847	2,422	11,388	23,885
November.....	1,113	57,709	24,877	2,529	11,055	23,984
October.....	1,242	62,808	30,675	2,805	11,684	24,022
September.....	1,203	65,614	33,801	2,483	10,915	22,751
August.....	1,140	69,388	41,030	2,628	10,834	23,123
July.....	1,153	70,828	40,299	2,460	10,218	21,952
June.....	1,131	63,150	35,466	2,738	9,546	21,263
May.....	1,187	61,062	30,495	2,627	10,468	23,582
April.....	1,160	58,303	26,834	2,820	9,858	22,808
March.....	1,249	61,878	24,612	2,819	10,058	23,030
February.....	1,151	55,544	21,080	2,447	8,990	20,827
January.....	1,272	57,378	22,636	2,682	9,975	21,667
1968						
December.....	1,263	58,321	26,849	2,973	9,861	21,316

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy—\$1.50 per year.

TABLE 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

SIC CODE	CHEMICAL AND BASIS	UNIT OF MEASURE	DECEMBER 1970 QUANTITY PRODUCED	NOVEMBER 1970 QUANTITY PRODUCED	DECEMBER 1969 QUANTITY PRODUCED
2813200	ACETYLENE (1)	MIL.CU.FT	1 073	1 102	1 203
2813415	ARGON, HIGH PURITY	DO	246	241	235
2813311	CARBON DIOXIDE: LIQUID AND GAS (2)	S. TONS	57 456	56 432	54 998
2813331	SOLID (DRY ICE)	DO	20 488	20 850	25 847
	HYDROGEN, HIGH PURITY (99.5-100%); TOTAL (3) . .	MIL.CU.FT	2 448	2 277	2 422
2813421	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	253	249	221
2813424	PRODUCED FOR OWN USE	DO	823	793	762
2813422	PRODUCED FOR PIPELINE SHIPMENT	DO	943	891	1 439
2813426	LIQUID.	DO	429	344	
2813427	HYDROGEN, LOWER PURITY (LESS THAN 99.5%) (3) . .	DO	2 522	2 475	2 920
	NITROGEN, HIGH PURITY (99.5-100%); TOTAL (4) . .	DO	12 661	12 392	11 388
2813441	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	61	52	60
2813442	PRODUCED FOR PIPELINE SHIPMENT	DO	7 374	7 065	6 514
2813444	PRODUCED FOR OWN USE	DO	1 118	1 125	1 107
2813445	LIQUID.	DO	4 108	4 150	3 707
	OXYGEN, HIGH PURITY (99.5-100%); TOTAL	DO	23 822	23 341	23 885
2813452	GAS: PRODUCED FOR CYLINDER AND BULK DELIVERY SHIPMENT.	DO	69	66	96
2813453	PRODUCED FOR PIPELINE SHIPMENT	DO	18 887	18 613	18 678
2813455	PRODUCED FOR OWN USE	DO	949	778	1 075
2813456	LIQUID.	DO	3 917	3 884	4 036
2813457	OXYGEN, LOWER PURITY (LESS THAN 99.5%) (4) (95% O)	S. TONS	106 459	102 365	141 824

(1) EXCLUDES QUANTITIES OF ACETYLENE PRODUCED AND CONSUMED BY RAILROAD SHOPS, SHIPYARDS, AND SMALL ESTABLISHMENTS USING PORTABLE GENERATORS.

(2) EXCLUDES PRODUCTION OF LIQUID AND GAS CO₂ CONVERTED TO AND REPORTED AS DRY ICE AND ALSO AMOUNTS CONVERTED FROM PURE CO₂ (LIQUID OR SOLID) PURCHASED OR RECEIVED FROM OTHER PLANTS. ALSO EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN PLANTS MANUFACTURING SODA ASH OR UREA.

(3) EXCLUDES QUANTITIES PRODUCED AND CONSUMED IN THE MANUFACTURE OF METHANOL AND AMMONIA, BUT INCLUDES AN UNSPECIFIED AMOUNT OF HYDROGEN PRODUCED FOR SALE OR INTER-PLANT TRANSFER TO PLANTS CONSUMING THIS GAS IN THE PRODUCTION OF AMMONIA. ALSO EXCLUDES AMOUNTS OF HYDROGEN PRODUCED IN PETROLEUM REFINERIES FOR CAPTIVE USE. HOWEVER, OF THE TOTAL SHOWN FOR LOWER PURITY HYDROGEN PRIOR TO 1969, 70 TO 75 PERCENT WAS ACCOUNTED FOR BY PETROLEUM REFINERS WITH CAPTIVE HYDROGEN PRODUCTION. NOT ALL SUCH PETROLEUM REFINERIES WERE CANVASSED IN THIS SURVEY.

(4) EXCLUDES AMOUNTS PRODUCED AND USED IN THE MANUFACTURE OF AMMONIA AND AMMONIA DERIVATIVES.

DESCRIPTION OF SURVEY

The statistics in this publication were collected on Census Monthly Form M28A.2, Industrial Gases - Production, and represent complete coverage of the approximately 670 producers of elemental gases, carbon dioxide, and acetylene.

The current month's figures may include estimates for respondents whose reports were not received in time for tabulation. Such estimates are based on month-to-month trends shown by reporting firms and are generally limited to a maximum of 25 percent for any one item. Individual items with higher imputation rates are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with high imputation rates, therefore, should be used with caution.

Statistics for previous months may be revised, due to receipt of corrected data from respondents, including late reports for which estimates were made, and other corrections. Figures which were revised significantly are indicated by footnotes.

The data are not adjusted for seasonal variation or number of working days.

RELATED REPORTS

Monthly Current Industrial Report, Inorganic Chemicals, Series M28A, includes production and stock data for specified inorganic chemicals. Monthly CIR report, Inorganic Fertilizer Materials and Related Acids, Series M28B, includes production and stock data for ammonia and ammonia compounds, phosphatic fertilizers, and sulfuric acid.

An annual Current Industrial Report covering production and shipments of industrial gases is published in this series. The annual report includes more historical data and product detail than are shown in the monthly reports, and also includes detail by States for a number of industrial gases. The report is numbered M28A, Supplement 2.

EXPLANATION OF TERMS

Production - Data shown for production represent total quantity of each chemical produced, including quantity consumed in plants, and for sale or transfer to other plants or warehouses of the same company. The statistics presented in the tables provide an up-to-date measure of activity in the inorganic field, but do not necessarily indicate amounts entering the market. In some cases, figures are included for material produced "in process" as an intermediate to the end products.

Stocks - Data shown for stocks represent quantities on hand, at the end of the month, at producing locations only, unless footnoted to indicate that the stock figure represents total stocks of producing companies including amounts held at locations other than producing plants.

Industrial Gases**Summary for 1970
(Preliminary)****U.S. DEPARTMENT OF COMMERCE / Bureau of the Census**

FOR RELEASE: April 30, 1971

SER

Annual data for 1970 and 1969 shown in this release are a compilation of the monthly figures which have been appearing in this series. The figures for 1970 should be considered as preliminary and subject to revisions based on information furnished on Form MA-28E.2, Annual Report on Shipments and Production of Industrial Gases.

The statistics presented in the accompanying tables are for primary production, covering quantities produced for further processing in the same plant, for intra-company transfer, and for sale. They provide an up-to-date measure of activity in the inorganic field but do not necessarily indicate amounts entering the market. In some cases figures are included for material produced "in process" as an intermediate to the end products.

ACKNOWLEDGMENTS--This report was prepared in the Industry Division under the direction of Lonnie M. Conner, Chief, Chemicals and Wood Products Branch. Reese R. Morgan, Chief, Chemicals, assisted by Thomas W. Halio, was directly responsible for the review of the data and preparation of the report. Owen C. Gretton, Chief of the Division, and Elmer S. Biles, Assistant Chief, provided overall direction and coordination of this project.

PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

Sic code	Chemical and basis	Unit of measure	Production	
			1970	1969
2813200	Acetylene (1).....	Mil.cu.ft..	14,386	14,382
2813415	Argon, high purity.....	...do.....	2,597	2,972
2813311	Carbon dioxide:			
	Liquid and gas (2).....	S. tons....	700,049	786,676
2813331	Solid (dry ice).....	...do.....	369,321	333,187
	Hydrogen, high purity (99.5-100%), total (3).....	Mil.cu.ft..	31,939	28,407
	Gas:			
2813421	Produced for cylinder and bulk delivery shipment.....	...do.....	(NA)	2,952
2813424	Produced for own use.....	...do.....	(NA)	9,071
2813422	Produced for pipeline shipment.....	...do.....	(NA)	16,384
2813426	Liquid.....	...do.....		
2813427	Hydrogen, lower purity (less than 99.5%) (3).....	...do.....	33,151	30,193
	Nitrogen, high purity (99.5-100%), total (4).....	...do.....	130,956	146,547
	Gas:			
2813441	Produced for cylinder and bulk delivery shipment.....	...do.....	(NA)	705
2813442	Produced for pipeline shipment.....	...do.....	(NA)	81,261
2813444	Produced for own use.....	...do.....	(NA)	13,243
2813445	Liquid.....	...do.....	(NA)	51,338
	Oxygen, high purity (99.5-100%), total.....	...do.....	275,962	279,352
	Gas:			
2813452	Produced for cylinder and bulk delivery shipment.....	...do.....	(NA)	841
2813453	Produced for pipeline shipment.....	...do.....	(NA)	219,391
2813455	Produced for own use.....	...do.....	(NA)	10,372
2813456	Liquid.....	...do.....	(NA)	48,748
2813457	Oxygen, lower purity (less than 99.5%) (4) (95% O).....	S. tons....	2,055,203	1,504,721

(NA) Not available.

(1) Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

(2) Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plant manufacturing soda ash or urea.

(3) Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use.

(4) Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.



CURRENT INDUSTRIAL REPORTS

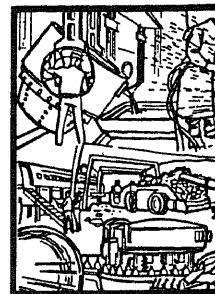
C.2

Industrial Gases

Summary for 1970

MAY 13 12 25 PM '71 (Preliminary) (Revised)

U.S. DEPARTMENT OF COMMERCE / Bureau of the Census



FOR RELEASE: May 11, 1971

SERIES: M28C(70)-13

Annual data for 1970 and 1969 shown in this report are a compilation of the monthly figures which have been appearing in this series. The figures for 1970 should be considered as preliminary and subject to revisions based on information furnished on Form MA-28E.2, Annual Report on Shipments and Production of Industrial Gases.

The statistics presented in the accompanying tables are for primary production, covering quantities produced for further processing in the same plant, for intra-company transfer, and for sale. They provide an up-to-date measure of activity in the inorganic field but do not necessarily indicate amounts entering the market. In some cases figures are included for material produced "in process" as an intermediate to the end products.

ACKNOWLEDGMENTS--This report was prepared in the Industry Division under the direction of Lonnie M. Conner, Chief, Chemicals and Wood Products Branch. Reese R. Morgan, Chief, Chemicals, assisted by Thomas W. Halio, was directly responsible for the review of the data and preparation of the report. Owen C. Gretton, Chief of the Division, and Elmer S. Biles, Assistant Chief, provided overall direction and coordination of this project.

The 1970 figures published on April 30, 1971, were printed under the 1969 column heading and vice versa. The figures in this report are now in the proper columns.

Inquiries concerning these figures should be addressed to the U.S. Department of Commerce, Bureau of the Census, Industry Division Washington, D.C. 20233. This publication is for sale by the Bureau of the Census, Price: 15 cents per copy--\$1.50 per year.

PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES

Sic code	Chemical and basis	Unit of measure	Production	
			1970	1969
2813200	Acetylene (1).....	Mil.cu.ft..	14,382	14,386
2813415	Argon, high purity.....	...do.....	2,972	2,597
	Carbon dioxide:			
2813311	Liquid and gas (2).....	S. tons....	786,676	700,049
2813331	Solid (dry ice).....	...do.....	333,187	369,321
	Hydrogen, high purity (99.5-100%), total (3).....	Mil.cu.ft..	28,407	31,939
	Gas:			
2813421	Produced for cylinder and bulk delivery shipment.....	...do.....	2,952	(NA)
2813424	Produced for own use.....	...do.....	9,071	(NA)
2813422	Produced for pipeline shipment.....	...do.....	16,384	(NA)
2813426	Liquid.....	...do.....		
2813427	Hydrogen, lower purity (less than 99.5%) (3).....	...do.....	30,193	33,151
	Nitrogen, high purity (99.5-100%), total (4).....	...do.....	146,547	130,956
	Gas:			
2813441	Produced for cylinder and bulk delivery shipment.....	...do.....	705	(NA)
2813442	Produced for pipeline shipment.....	...do.....	81,261	(NA)
2813444	Produced for own use.....	...do.....	13,243	(NA)
2813445	Liquid.....	...do.....	51,338	(NA)
	Oxygen, high purity (99.5-100%), total.....	...do.....	279,352	275,962
	Gas:			
2813452	Produced for cylinder and bulk delivery shipment.....	...do.....	841	(NA)
2813453	Produced for pipeline shipment.....	...do.....	219,391	(NA)
2813455	Produced for own use.....	...do.....	10,372	(NA)
2813456	Liquid.....	...do.....	48,748	(NA)
2813457	Oxygen, lower purity (less than 99.5%) (4) (95% O).....	S. tons....	1,504,721	2,055,203

(NA) Not available.

(1) Excludes quantities of acetylene produced and consumed by railroad shops, shipyards, and small establishments using portable generators.

(2) Excludes production of liquid and gas CO₂ converted to and reported as dry ice and also amounts converted from pure CO₂ (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plant manufacturing soda ash or urea.

(3) Excludes quantities produced and consumed in the manufacture of methanol and ammonia, but includes an unspecified amount of hydrogen produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts of hydrogen produced in petroleum refineries for captive use.

(4) Excludes amounts produced and used in the manufacture of ammonia and ammonia derivatives.



Industrial Gases

1970



U.S. DEPARTMENT OF COMMERCE / Bureau of the Census

January 1972

SERIES M28C(70)-14

LIBRARY
JAN 31 1972
BUREAU OF THE CENSUS

Shipments of industrial gases by primary manufacturers in 1970 totaled \$633 million, or about 2 percent more than the 1969 figure of \$623 million. The 1970 total is composed of \$99 million for acetylene; \$37 million for carbon dioxide; and \$498 million for the product grouping elemental gases and other industrial gases, n.e.c. Compared with 1969, the 1970 totals showed a slight increase for acetylene, a decrease of 11 percent for carbon dioxide, and an increase of 3 percent for other elemental gases.

Figures in this report exclude values for hydrocarbon gases, such as propane, butane and propylene of halogenated hydrocarbons and cyclopropane, which are reported to the United States Tariff Commission, and for sulfur dioxide and chlorine, which are shown in the Current Industrial Reports, Series M28A(70)-13, Inorganic Chemicals and Gases.

The shipments values for some of the gases, particularly oxygen, reported by companies vary widely not only because of the conditions of sales, including delivery by pipeline or cylinder, but also because plant operations differ. The manufacturing and selling activities of some companies are centralized at the primary production site, while other companies sell or ship liquefied gases to other sites (filling stations or conversion units) where the products are changed in form, "packaged," and sold. The values reported for some sites thus include marketing activities and for other sites do not.

Figures showing the quantities shipped to other plants of producing companies (interplant transfers) were not compiled separately and thus are unavailable. In evaluating these interplant transfers for inclusion in the totals, respondents were instructed to report values which would approximate the commercial selling value, f.o.b. plant, and not the cost of production or some other book price. For elemental gases, respondents were requested to report shipments by method of distribution (see table 3).

To avoid duplication in the product statistics, collection of information for gases is limited to primary producers. Special reporting instructions are also provided for carbon dioxide producers so that the chemical produced and shipped is reported only once, either in solid or liquid (including gaseous) form. Statistics for crude argon, lower purity nitrogen, lower purity hydrogen, and lower purity oxygen, were collected separately; and statistics exclude such activities as the liquefaction of purchased nitrogen. The quantities reported as produced, however, exclude any information for gases used as fuel in producing plant, vented, or disposed of as waste. Other limitations of the statistics are indicated in footnotes appearing at the end of table 1.

In addition to the annual production statistics shown in table 1, monthly statistics for specified gases are shown in table 2. These monthly statistics supersede those which were released earlier in the monthly Current Industrial Reports, Series

M28C, Industrial Gases, United States Production. Monthly and annual statistics have been issued beginning with January 1941. Geographic totals for specific gases are shown in tables 4 through 9. The geographic distribution of industrial gas plants by State is shown in table 10.

Although quantities produced and consumed in producing plants were not compiled, the statistics may be estimated from the production and shipments figures shown in table 1. While such approximations fail to give consideration to changes in stocks held at producing sites, such changes, based on stock information filed from January 1954 through December 1956, do not affect such estimations significantly.

All figures included in this report are collected in thousand cubic feet, 70° F, at 1 atmosphere pressure, unless otherwise specified.

ACKNOWLEDGMENTS--This report was prepared in the Industry Division under the direction of Lonnie M. Conner, Chief for Chemicals, Wood Products, and Nonmetallic Minerals Branch. Reese R. Morgan, Chief, Chemicals, assisted by Doris W. Funk, was directly responsible for the review of the data and preparation of the report. Elmer S. Biles, Acting Chief of the Division, provided overall direction and coordination to this project.

Table 1.--ANNUAL PRODUCTION AND SHIPMENTS OF INDUSTRIAL GASES: 1966 TO 1970

3

Code	Product	Unit of measure	Year	Production (quantity)	Shipments including interplant transfers					
					Total		Shipped as gas		Shipped as liquid	
					Quantity	Value (\$1,000)	Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
2813---	INDUSTRIAL GASES, TOTAL.....	.....	1970	(X)	(X)	¹ 633,162	(X)	(X)	(X)	(X)
			1969	(X)	(X)	¹ 623,114	(X)	(X)	(X)	(X)
			1968	(X)	(X)	¹ 607,521	(X)	(X)	(X)	(X)
			1967	(X)	(X)	¹ 572,313	(X)	(X)	(X)	(X)
			1966	(X)	(X)	¹ 532,223	(X)	(X)	(X)	(X)
28132--	Acetylene.....	Mil. cu. ft.	1970	² 14,834	8,926	98,952	(X)	(X)	(X)	(X)
			1969	² 15,818	¹ 9,372	¹ 98,542	(X)	(X)	(X)	(X)
			1968	² 15,071	8,151	89,025	(X)	(X)	(X)	(X)
			1967	² 14,269	8,176	87,147	(X)	(X)	(X)	(X)
			1966	² 16,598	9,548	97,532	(X)	(X)	(X)	(X)
28133--	Carbon dioxide, total.....	Short tons..	1970	¹ 1,115,454	¹ 1,008,290	¹ 36,702	(X)	(X)	(X)	(X)
			1969	¹ 1,166,611	¹ 1,079,401	¹ 40,627	(X)	(X)	(X)	(X)
			1968	¹ 1,058,120	943,466	41,774	(X)	(X)	(X)	(X)
			1967	¹ 1,089,309	971,603	47,420	(X)	(X)	(X)	(X)
			1966	¹ 1,081,878	947,959	50,153	(X)	(X)	(X)	(X)
2813311	Liquid and gas.....	...do.....	1970	³ 794,810	690,743	19,027	(X)	(X)	(X)	(X)
			1969	³ 802,429	⁷ 14,629	20,915	(X)	(X)	(X)	(X)
			1968	³ 684,014	575,945	22,491	(X)	(X)	(X)	(X)
			1967	³ 717,199	618,891	29,359	(X)	(X)	(X)	(X)
			1966	³ 702,831	585,995	31,189	(X)	(X)	(X)	(X)
2813331	Solid (dry ice).....	...do.....	1970	³ 320,644	317,547	17,675	(X)	(X)	(X)	(X)
			1969	³ 364,182	³ 364,772	¹ 19,712	(X)	(X)	(X)	(X)
			1968	374,106	367,521	19,283	(X)	(X)	(X)	(X)
			1967	372,110	352,712	18,061	(X)	(X)	(X)	(X)
			1966	379,047	361,964	18,964	(X)	(X)	(X)	(X)
28134--	Elemental gases and other industrial gases, n.e.c., total.....	.....	1970	(X)	(X)	¹ 497,508	(X)	(X)	(X)	(X)
			1969	(X)	(X)	¹ 483,945	(X)	(X)	(X)	(X)
			1968	(X)	(X)	¹ 476,722	(X)	(X)	(X)	(X)
			1967	(X)	(X)	¹ 437,746	(X)	(X)	(X)	(X)
			1966	(X)	(X)	¹ 384,538	(X)	(X)	(X)	(X)
2813415	Argon, high purity (99.97-100%)....	Mil. cu. ft.	1970	2,742	2,741	39,140	208	7,414	2,533	31,726
			1969	2,597	2,596	38,659	233	8,293	2,363	30,366
			1968	2,114	2,113	33,162	220	7,290	1,893	25,872
			1967	1,912	1,910	25,499	291	9,457	1,619	16,042
			1966	1,710	1,710	26,741	308	10,294	1,402	16,447
	Helium ⁴.....	...do.....	1970	4,677	647	(NA)	(NA)	(NA)	(NA)	(NA)
			1969	4,752	760	(NA)	(NA)	(NA)	(NA)	(NA)
			1968	4,855	867	(NA)	(NA)	(NA)	(NA)	(NA)
			1967	4,712	907	(NA)	(NA)	(NA)	(NA)	(NA)
			1966	4,606	948	(NA)	(NA)	(NA)	(NA)	(NA)
	Hydrogen, total.....	...do.....	1970	⁵ 59,654	¹ 20,940	¹ 35,380	(D)	(D)	(D)	(D)
			1969	⁵ 64,821	¹ 25,456	¹ 38,101	(D)	(D)	(D)	(D)
			1968	⁵ 201,752	28,255	37,822	(D)	(D)	(D)	(D)
			1967	⁵ 158,539	27,666	39,131	(D)	(D)	(D)	(D)
			1966	⁵ 137,719	30,649	42,989	(D)	(D)	(D)	(D)
	High purity, total.....	...do.....	1970	28,891	19,096	34,489	(D)	(D)	(D)	(D)
			1969	¹ 32,180	23,078	37,282	(D)	(D)	(D)	(D)
			1968	34,699	25,587	36,981	(D)	(D)	(D)	(D)
			1967	34,088	25,607	38,414	(D)	(D)	(D)	(D)
			1966	35,494	27,849	42,148	(D)	(D)	(D)	(D)
2813423	Electrolytic process.....	...do.....	1970	11,534	7,265	9,667	(D)	(D)	-	-
			1969	14,444	10,202	10,092	(D)	(D)	-	-
			1968	13,656	9,359	10,155	(D)	(D)	-	-
			1967	14,374	9,693	11,251	(D)	(D)	(D)	(D)
			1966	13,709	9,446	11,145	(D)	(D)	(D)	(D)
2813425	From other sources.....	...do.....	1970	17,357	11,831	24,822	(D)	(D)	(D)	(D)
			1969	¹ 17,736	12,876	27,190	(D)	(D)	(D)	(D)
			1968	21,043	16,228	26,826	(D)	(D)	(D)	(D)
			1967	19,714	15,914	27,163	(D)	(D)	(D)	(D)
			1966	21,785	18,403	31,003	(D)	(D)	(D)	(D)
2813427	Lower purity (less than 99.5%) (100% basis).....	...do.....	1970	⁵ 30,763	¹ 1,844	891	(NA)	(NA)	-	-
			1969	⁵ 32,641	¹ 2,378	819	(NA)	(NA)	-	-
			1968	⁵ 167,053	2,668	841	(NA)	(NA)	-	-
			1967	⁵ 124,451	2,059	717	(NA)	(NA)	-	-
			1966	⁵ 102,225	2,800	851	(NA)	(NA)	-	-

See footnotes at end of table.

Table 1.--ANNUAL PRODUCTION AND SHIPMENTS OF INDUSTRIAL GASES: 1966 TO 1970--Continued

Code	Product	Unit of measure	Year	Production (quantity)	Shipments including interplant transfers					
					Total		Shipped as gas		Shipped as liquid	
					Quantity	Value (\$1,000)	Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
2813---	INDUSTRIAL GASES--Continued									
28134--	Elemental gases and other industrial gases, n.e.c.--Continued									
2813443	Nitrogen, high purity (99.5-100%).....	Mil. cu. ft.	1970	⁶ 151,191	134,925	123,032	⁸ 2,047	² 29,906	⁵ 52,878	¹ 93,126
			1969	⁶ 132,691	¹ 118,305	¹ 118,635	⁷ 70,753	¹ 27,047	¹ 47,552	¹ 91,588
			1968	⁶ 118,731	105,370	114,777	61,056	23,819	44,314	90,958
			1967	⁶ 103,933	91,941	99,640	53,077	25,147	38,864	74,493
			1966	⁸ 89,946	78,700	80,637	47,100	28,771	31,600	51,866
	Oxygen, high purity (99.5-100%), total.....	...do.....	1970	283,860	273,465	237,675	224,351	121,274	49,114	116,401
			1969	275,962	264,958	229,454	216,576	111,117	48,382	118,337
			1968	247,995	238,408	224,867	192,458	102,375	45,950	122,492
			1967	225,191	220,802	208,758	178,914	108,801	41,888	99,957
			1966	212,751	202,446	173,804	159,402	106,865	43,044	66,939
2813451	Electrolytic.....	...do.....	1970	308	263	879	(D)	(D)	(D)	(D)
			1969	351	296	1,135	(D)	(D)	(D)	(D)
			1968	371	299	1,194	(D)	(D)	(D)	(D)
			1967	406	319	1,366	(D)	(D)	(D)	(D)
			1966	519	366	1,891	(D)	(D)	(D)	(D)
2813454	Liquefaction.....	...do.....	1970	283,552	273,202	236,796	(D)	(D)	(D)	(D)
			1969	¹ 275,611	¹ 264,662	¹ 228,575	(D)	(D)	(D)	(D)
			1968	247,624	238,109	223,673	(D)	(D)	(D)	(D)
			1967	224,785	220,483	207,392	(D)	(D)	(D)	(D)
			1966	212,232	202,080	171,913	(D)	(D)	(D)	(D)
2813457	Oxygen, lower purity.....	Short tons..	1970	⁷ 1,898,513	(D)	(⁸)	(D)	(D)	-	-
			1969	⁷ 2,030,582	(D)	(⁸)	(D)	(D)	-	-
			1968	⁷ 2,173,697	(D)	(⁸)	(D)	(D)	-	-
			1967	⁷ 1,971,981	(D)	(⁸)	(D)	(D)	-	-
			1966	⁷ 2,097,353	(D)	(⁸)	(D)	(D)	-	-
2813471	Nitrous oxide.....	1,000 gals. (STP).....	1970	1,098,553	1,098,342	3,890	(X)	(X)	(X)	(X)
			1969	1,052,712	1,051,910	3,917	(X)	(X)	(X)	(X)
			1968	996,658	996,586	3,887	(X)	(X)	(X)	(X)
			1967	953,065	953,583	4,432	(X)	(X)	(X)	(X)
			1966	931,858	935,514	4,612	(X)	(X)	(X)	(X)
2813498	Other industrial gases, n.e.c., including lower purity nitrogen, crude argon, carbon dioxide produced and transferred for further processing, and crude and high purity helium produced in privately owned plants ⁹.....	.....	1970	(X)	(X)	⁸ 58,391	(X)	(X)	(X)	(X)
			1969	(X)	(X)	⁸ 60,676	(X)	(X)	(X)	(X)
			1968	(X)	(X)	⁸ 62,207	(X)	(X)	(X)	(X)
			1967	(X)	(X)	⁸ 60,286	(X)	(X)	(X)	(X)
			1966	(X)	(X)	⁸ 55,745	(X)	(X)	(X)	(X)

-Represents zero. (D) Withheld to avoid disclosing figures for individual companies. (NA) Not available. n.e.c. Not elsewhere classified. Revised. (X) Not applicable.

¹Excludes value for helium produced in government owned plants.

²Excludes information from railroad shops, shipyards, welding shops, and small establishments using portable generators.

³Excludes production of liquid and gas carbon dioxide converted to and reported as dry ice and also amounts converted from pure carbon dioxide (liquid or solid) purchased or received from other plants. Also excludes quantities produced and consumed in plants manufacturing soda ash or urea, and quantities produced and transferred to other plants where it is further processed.

⁴Source: U.S. Department of Interior, Bureau of Mines.

⁵Excludes amounts vented, used as fuel, etc., and amounts produced and consumed in the manufacture of synthetic ammonia and methanol, but includes an unspecified amount produced for sale or interplant transfer to plants consuming this gas in the production of ammonia. Also excludes amounts produced by the ammonia dissociation process (cracking of ammonia). Also excludes amounts produced in petroleum refineries for captive use. However, of the total shown for lower purity hydrogen prior to 1969, 70 to 75 percent was accounted for by petroleum refiners with captive hydrogen production. Not all such petroleum refineries were canvassed in this survey.

⁶Excludes amounts produced and consumed in the manufacture of synthetic ammonia or ammonia derivatives.

⁷Excludes amounts produced and used in the manufacture of ammonia.

⁸Code 2813457 combined with 2813498.

⁹Excludes hydrocarbon gases such as propane, butane, and propylene, or halogenated hydrocarbons and cyclopropane, which are reported to the U.S. Tariff Commission. Also excludes sulfur dioxide and chlorine, figures for which are shown in Current Industrial Reports Series M28A(70)-13, Inorganic Chemicals and Gases.

Table 2.--PRIMARY PRODUCTION OF SPECIFIED INDUSTRIAL GASES, BY MONTHS: 1969 AND 1970

Months	Acetylene 2813200 (mil. cu. ft.)	Carbon dioxide		Argon (refined) 2813415 (mil. cu. ft.)	Hydrogen		Nitrogen (high purity 2813443 (mil. cu. ft.)	Oxygen	
		Liquid and gas 2813311 (short tons)	Solid (dry ice) 2813331 (short tons)		High purity 2812423 (mil. cu. ft.)	Lower purity 2813427 (mil. cu. ft.)		High purity 2813451 (mil. cu. ft.)	Lower purity 2813457 (short tons)
1970, TOTAL..	14,834	794,810	320,644	2,742	28,891	130,763	151,191	283,880	1,898,513
January.....	1,415	57,131	20,294	207	2,378	2,585	12,043	23,123	176,667
February.....	1,336	63,724	27,193	206	2,366	2,368	11,343	22,241	171,206
March.....	1,271	69,270	23,064	279	2,395	2,630	12,334	24,472	171,043
April.....	1,301	70,756	24,758	226	2,442	2,588	11,996	23,919	174,913
May.....	1,257	76,478	31,883	228	2,473	2,619	12,637	24,248	167,133
June.....	1,575	67,518	31,909	221	2,431	2,631	12,384	23,614	161,946
July.....	1,197	68,807	34,537	214	2,284	2,576	13,295	23,298	160,108
August.....	1,107	71,532	32,874	209	2,458	2,572	13,298	23,086	142,703
September.....	1,138	72,955	29,381	233	2,317	2,510	12,948	23,284	144,984
October.....	1,096	62,982	24,439	223	2,598	2,582	13,231	24,831	151,319
November.....	1,085	56,409	20,766	246	2,315	2,527	12,713	23,631	136,188
December.....	1,056	57,248	19,546	250	2,424	2,575	12,969	24,113	140,293
1969, TOTAL..	15,818	802,429	364,182	2,597	32,180	132,641	132,691	275,962	2,030,582
January.....	1,408	64,459	22,942	225	2,754	2,792	10,666	21,926	173,408
February.....	1,284	62,850	21,339	192	2,510	2,663	9,830	21,086	170,061
March.....	1,385	67,121	24,988	197	2,842	2,944	10,901	23,290	181,115
April.....	1,294	64,485	27,281	218	2,883	2,892	10,468	23,068	170,609
May.....	1,320	66,590	31,059	219	2,690	2,872	11,150	23,841	166,492
June.....	1,265	68,032	36,193	192	2,801	2,713	10,228	21,522	171,037
July.....	1,288	75,056	41,190	203	2,523	2,563	10,970	22,211	165,646
August.....	1,274	72,541	41,944	245	2,690	2,929	11,447	23,382	166,978
September.....	1,339	69,660	34,482	232	2,545	2,616	11,546	23,010	167,162
October.....	1,378	67,397	31,251	233	2,867	2,685	12,134	24,281	158,370
November.....	1,246	63,250	25,266	230	2,591	2,499	11,505	24,243	168,430
December.....	1,337	60,988	26,247	211	2,484	2,473	11,846	24,102	171,284

† Revised.

‡ Data for 1970 and 1969 exclude amounts produced in petroleum refineries for captive use.

Table 3.--SHIPMENTS OF SPECIFIED GASES, BY METHOD OF DISTRIBUTION: 1966 TO 1970

(Quantity in million cubic feet; value in thousands of dollars)

Code	Product	Year	Total shipments including inter- plant transfers		Shipped as gas						Shipped as liquid			
					Cylinder		Bulk delivery		Pipeline		Cylinder		Bulk delivery	
			Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
2813415	Argon, high purity....	1970	2,741	39,140	190	7,218	18	196	-	-	10	416	2,523	31,310
		1969	2,596	38,659	211	8,064	22	229	-	-	9	358	2,354	30,008
		1968	2,113	33,162	168	6,440	52	850	-	-	10	373	1,883	25,499
		1967	1,910	25,499	196	7,958	195	11,499	(1)	(1)	9	368	1,610	15,674
		1966	1,710	26,741	175	7,427	133	12,867	(1)	(1)	(D)	(D)	(D)	(D)
2813423 2813425	Hydrogen, high purity purity (99.5-100%)...	1970	19,096	34,489	493	2,196	(D)	(D)	11,111	7,935	-	-	(D)	(D)
		1969	23,078	37,282	512	2,202	(D)	(D)	13,825	8,007	-	-	(D)	(D)
		1968	25,587	36,981	498	2,466	(D)	(D)	13,593	7,655	-	-	(D)	(D)
		1967	25,607	38,414	457	2,683	(D)	(D)	13,533	7,555	-	-	(D)	(D)
		1966	27,849	42,148	423	2,397	(D)	(D)	13,568	9,720	-	-	(D)	(D)
2813443	Nitrogen, high purity.	1970	134,925	123,032	284	2,271	396	2,260	81,367	25,375	189	1,035	52,689	92,091
		1969	118,305	118,635	325	2,226	298	1,721	70,130	23,100	147	703	47,405	90,885
		1968	105,370	114,777	362	2,730	474	1,961	60,220	19,128	180	822	44,134	90,136
		1967	91,941	99,640	396	3,171	379	2,100	52,302	19,876	207	951	38,657	73,542
		1966	78,700	80,637	401	3,782	555	2,875	46,144	22,114	496	1,796	31,104	50,070
	Oxygen, high purity, total.....	1970	273,465	237,675	791	7,408	2,256	2,974	221,304	110,892	169	1,040	48,945	115,361
		1969	264,958	229,454	1,115	8,607	2,165	2,901	213,296	99,609	177	1,081	48,205	117,256
		1968	238,408	224,867	960	8,321	2,338	3,164	189,160	90,890	181	1,030	45,769	121,462
		1967	220,802	208,758	1,396	11,642	2,460	4,726	175,058	92,433	343	1,640	41,545	98,317
		1966	202,446	173,804	1,752	14,308	2,556	5,712	155,094	86,845	374	1,579	42,670	65,360
2813451	Electrolytic process.....	1970	263	879	63	583	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1969	296	1,135	72	571	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1968	299	1,194	71	713	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1967	319	1,366	85	836	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1966	366	1,891	96	1,080	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
2813454	Liquefaction process.....	1970	273,202	236,796	728	6,825	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1969	264,662	228,575	1,043	8,036	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1968	238,109	223,673	889	7,608	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1967	220,483	207,392	1,311	10,806	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1966	202,080	171,913	1,656	13,228	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies.

† Revised.

‡ Pipeline shipments are included with bulk delivery to avoid disclosing figures for individual companies.

Table 4.--PRODUCTION AND SHIPMENTS OF ACETYLENE, BY GEOGRAPHIC AREA: 1970

Geographic area	Production (mil. cu. ft.)	Total shipments including interplant transfers	
		Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	14,834	8,926	98,952
Northeast Region and North Central Region...	2,672	1,844	33,373
South Region.....	11,721	6,796	57,600
Mountain Division.....	76	65	2,147
Pacific Division.....	365	221	5,832

¹See table 10 for the number of establishments reporting production by State.

Table 5.--PRODUCTION AND SHIPMENTS OF CARBON DIOXIDE, BY DIVISIONS: 1970

Division	Total liquid and solid			Liquid and gas			Solid (dry ice)		
	Production (short tons)	Shipments		Production (short tons)	Shipments		Production (short tons)	Shipments	
		Quantity (short tons)	Value (\$1,000)		Quantity (short tons)	Value (\$1,000)		Quantity (short tons)	Value (\$1,000)
UNITED STATES, TOTAL ¹	1,115,454	1,008,290	36,702	794,810	690,743	19,027	320,644	317,547	17,675
New England and Middle Atlantic.....	144,238	140,133	5,645	96,621	93,546	2,459	47,617	46,587	3,186
East North Central.....	177,332	164,420	7,931	118,700	105,788	4,011	58,632	58,632	3,920
West North Central.....	179,709	170,764	5,122	140,804	133,825	2,701	38,905	36,939	2,421
South Atlantic and East South Central....	195,417	181,903	9,586	135,187	121,774	5,914	60,230	60,129	3,672
West South Central.....	205,052	144,152	2,772	181,870	120,970	1,461	23,182	23,182	1,311
Mountain.....	48,766	48,766	937	20,382	20,382	288	28,384	28,384	649
Pacific.....	164,940	158,152	4,709	101,246	94,458	2,193	63,694	63,694	2,516

¹See table 10 for the number of establishments reporting production by State.

Table 6.--SHIPMENTS OF ARGON (HIGH PURITY) BY GEOGRAPHIC AREA: 1970

Geographic area	Total shipments including interplant transfers	
	Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	2,741	39,140
Northeast Region.....	643	8,701
East North Central Division.....	980	13,265
Ohio.....	359	4,635
South Atlantic Division.....	398	6,047
East South Central Division.....	72	1,196
West South Central Division.....	258	3,184
West Region.....	390	6,747
California.....	293	4,317

¹See table 10 for the number of establishments reporting production by State.

Table 7.--PRODUCTION AND SHIPMENTS OF HYDROGEN (HIGH PURITY) BY GEOGRAPHIC AREA: 1970

Geographic area	Production (mil. cu. ft.)	Total shipments including interplant transfers	
		Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	28,891	19,096	34,489
Northeast Region.....	4,395	2,305	6,146
North Central Region.....	4,770	3,253	6,299
South Region and West Region.....	19,726	13,538	22,044
East South Central Division.....	3,404	1,070	1,262
West South Central Division.....	6,116	4,038	6,063

¹See table 10 for the number of establishments reporting production by State.

Table 8.--PRODUCTION AND SHIPMENTS OF NITROGEN (HIGH PURITY) BY GEOGRAPHIC AREA: 1970

Geographic area	Production (mil. cu. ft.)	Total shipments including interplant transfers	
		Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	151,191	134,925	123,032
New England Division.....	2,829	2,802	4,795
Middle Atlantic Division.....	19,646	17,907	15,957
New York.....	3,049	2,708	2,583
New Jersey.....	6,800	6,780	3,455
Pennsylvania.....	9,797	8,419	9,919
North Central Region.....	28,006	27,246	32,086
Ohio.....	7,445	7,365	10,345
Illinois.....	6,137	6,076	9,205
South Atlantic Division.....	23,354	20,488	15,657
West Virginia.....	10,375	7,525	4,929
East South Central Division.....	7,486	5,693	7,275
Tennessee.....	2,729	1,349	1,735
Alabama.....	2,358	2,406	4,303
West South Central Division.....	51,301	42,281	21,369
Texas.....	38,372	34,621	15,756
Mountain Division.....	1,413	1,415	2,537
Utah.....	153	155	388
Pacific Division.....	17,156	17,093	23,356
California.....	16,489	16,426	18,896

¹See table 10 for the number of establishments reporting production by State.

Table 9.--PRODUCTION AND SHIPMENTS OF OXYGEN (HIGH PURITY), BY GEOGRAPHIC AREAS: 1970

Geographic area	Production (mil. cu. ft.)	Total shipments including interplant transfers	
		Quantity (mil. cu. ft.)	Value (\$1,000)
UNITED STATES, TOTAL ¹	283,860	273,465	237,675
New England Division.....	1,046	1,034	2,842
Middle Atlantic Division.....	64,418	64,242	49,456
New York.....	14,533	14,464	7,437
New Jersey.....	3,034	2,973	3,386
Pennsylvania.....	46,850	46,806	38,633
North Central Region.....	106,012	97,552	83,782
Ohio.....	35,094	35,092	24,556
Michigan.....	19,793	11,327	6,830
South Atlantic Region.....	35,372	34,126	26,496
West Virginia.....	18,970	17,810	12,398
Florida.....	1,044	1,044	2,973
East South Central Division.....	21,351	21,351	19,250
Alabama.....	7,923	7,923	9,875
West South Central Division.....	32,819	32,704	22,244
Texas.....	27,247	27,295	15,598
Mountain Division.....	6,403	6,017	7,899
Utah.....	3,161	2,775	2,695
Pacific Division.....	16,439	16,439	25,706
California.....	15,273	15,273	15,808

Note: Detailed figures may not add to totals because of independent rounding.

¹See table 10 for number of establishments reporting production by State.

Table 10.--NUMBER OF ESTABLISHMENTS REPORTING THE PRODUCTION OF SELECTED INDUSTRIAL GASES, BY STATE: 1970

State	Acetylene		Carbon dioxide			Argon (refined) 2813415	Hydrogen		Nitrogen high purity 2813443	Oxygen		Nitrous oxide 2813471
	From calcium carbide ¹ 2813211- 12	From other sources ¹ 2813251- 52	Total ¹ 28133	Liquid or gas ² 2813311	Solid 2813331		High purity ¹ 2813423- 25	Lower purity 2813427		High purity ¹ 2813451- 54	Lower purity 2813457	
UNITED STATES, TOTAL.....	204	14	62	51	39	67	99	41	192	172	12	5
New England.....	6	-	-	-	-	1	4	-	10	6	-	-
Maine.....	1	-	-	-	-	-	1	-	-	2	-	-
New Hampshire.....	-	-	-	-	-	-	-	-	-	-	-	-
Vermont.....	-	-	-	-	-	-	-	-	-	-	-	-
Massachusetts.....	3	-	-	-	-	1	1	-	6	3	-	-
Rhode Island.....	1	-	-	-	-	-	-	-	-	-	-	-
Connecticut.....	1	-	-	-	-	-	2	-	3	1	-	-
Middle Atlantic.....	21	-	5	4	3	10	12	3	31	31	1	1
New York.....	6	-	2	2	-	1	3	1	9	5	-	-
New Jersey.....	4	-	2	1	2	2	7	2	6	5	-	1
Pennsylvania.....	11	-	1	1	1	7	2	-	16	21	1	-
East North Central.....	37	1	8	6	6	16	24	8	39	43	-	1
Ohio.....	15	-	4	4	4	7	8	1	12	22	-	1
Indiana.....	6	1	1	1	-	3	3	-	5	4	-	-
Illinois.....	5	-	2	-	2	3	8	6	13	10	-	-
Michigan.....	8	-	-	-	-	3	5	1	7	6	-	-
Wisconsin.....	3	-	1	1	-	-	-	-	2	1	-	-
West North Central.....	17	-	9	7	5	-	2	2	6	7	1	1
Minnesota.....	3	-	2	1	1	-	-	-	1	2	1	-
Iowa.....	3	-	2	2	1	-	-	-	-	-	-	-
Missouri.....	2	-	3	2	2	-	1	1	4	3	-	1
North Dakota.....	-	-	-	-	-	-	-	-	-	-	-	-
South Dakota.....	3	-	-	-	-	-	-	-	1	2	-	-
Nebraska.....	1	-	-	-	-	-	1	-	-	-	-	-
Kansas.....	5	-	2	2	1	-	-	1	-	-	-	-
South Atlantic.....	26	2	8	7	5	8	11	5	24	15	-	1
Delaware.....	-	-	-	-	-	1	4	-	2	2	-	-
Maryland.....	2	-	-	-	-	1	-	-	3	1	-	-
District of Columbia.....	-	-	-	-	-	-	-	-	-	-	-	-
Virginia.....	3	-	2	2	2	1	1	1	2	2	-	1
West Virginia.....	4	2	1	1	-	2	3	3	9	4	-	-
North Carolina.....	3	-	1	1	-	1	-	-	2	2	-	-
South Carolina.....	1	-	-	-	-	-	-	-	2	-	-	-
Georgia.....	5	-	1	1	1	1	2	1	1	1	-	-
Florida.....	8	-	3	2	2	1	1	-	3	3	-	-
East South Central.....	16	-	1	1	1	4	14	4	19	16	2	-
Kentucky.....	2	-	-	-	-	-	4	1	7	4	1	-
Tennessee.....	9	-	1	1	1	1	7	2	7	4	1	-
Alabama.....	4	-	-	-	-	3	3	-	4	7	-	-
Mississippi.....	1	-	-	-	-	-	-	1	1	1	-	-
West South Central.....	34	9	12	9	5	13	13	13	35	26	8	-
Arkansas.....	1	-	-	-	-	-	-	-	1	1	-	-
Louisiana.....	6	2	4	3	2	4	5	1	12	8	2	-
Oklahoma.....	4	-	-	-	-	-	1	-	-	-	-	-
Texas.....	23	7	8	6	3	9	7	12	22	17	6	-
Mountain.....	20	-	5	4	5	3	4	-	8	9	-	-
Montana.....	3	-	-	-	-	-	-	-	1	1	-	-
Idaho.....	2	-	-	-	-	-	-	-	-	-	-	-
Wyoming.....	2	-	-	-	-	-	-	-	-	-	-	-
Colorado.....	5	-	1	1	1	1	1	-	2	2	-	-
New Mexico.....	2	-	2	2	2	-	-	-	2	2	-	-
Arizona.....	1	-	-	-	-	1	2	-	-	-	-	-
Utah.....	4	-	2	1	2	1	1	-	3	4	-	-
Nevada.....	1	-	-	-	-	-	-	-	-	-	-	-
Pacific.....	27	2	14	13	9	12	15	6	20	19	-	1
Washington.....	5	-	2	2	2	1	3	-	2	2	-	-
Oregon.....	6	-	-	-	-	1	3	-	1	1	-	-
California.....	11	2	7	6	6	10	8	6	14	13	-	1
Alaska.....	2	-	-	-	-	-	-	-	-	-	-	-
Hawaii.....	3	-	5	5	1	-	1	-	3	3	-	-

- Represents zero.

¹Unduplicated.²Excludes plants converting entire production to solid.